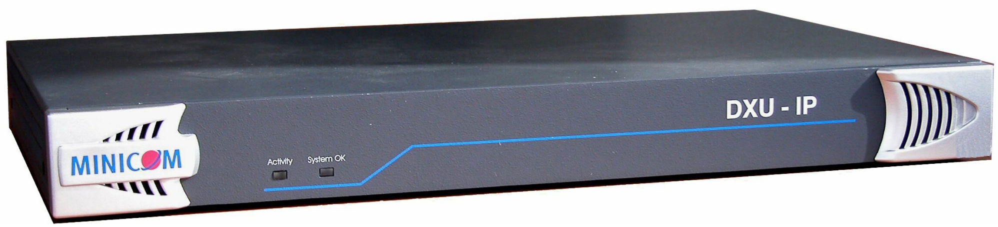
DX User IP

User Guide



www.minicom.com

International HQ

Jerusalem, Israel
Tel: + 972 2 535 9666
minicom@minicom.com

North American HQ

Linden, NJ, USA
Tel: + 1 908 4862100
info.usa@minicom.com

European HQ

Dübendorf, Switzerland
Tel: + 41 44 823 8000
info.europe@minicom.com

Customer support - support@minicom.com

Table of Contents

1. Welcome

Thank you for buying the DX User IP system. The DX User IP system is produced by Minicom Advanced Systems Limited.

Technical precautions

This equipment generates radio frequency energy and if not installed in accordance with the manufacturer’s instructions, may cause radio frequency interference.

This equipment complies with Part 15, Subpart J of the FCC rules for a Class A computing device. This equipment also complies with the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications. These above rules are designed to provide reasonable protection against such interference when operating the equipment in a commercial environment. If operation of this equipment in a residential area causes radio frequency interference, the user, and not Minicom Advanced Systems Limited, will be responsible.

Changes or modifications made to this equipment not expressly approved by Minicom Advanced Systems Limited could void the user’s authority to operate the equipment.

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2. Introduction

The DX User IP from Minicom Advanced Systems redirects local keyboard, mouse and video data to a remote computer. All data is transmitted via IP.

DX User IP features remote KVM access and control via a LAN or Internet connection. DX User IP provides a non-intrusive solution for remote access and control. Remote access and control software runs on the DX User IP embedded processors only and not on the servers, so there is no interference with server operation or impact on network performance.

Using one or several DX User IPs with the DX Central allows access to multiple remote servers via single remote console. The DX User IP combines digital remote KVM access via IP networks with a comprehensive and integrated system management.

Figure 1 illustrates the basic configuration of the DX system with the DX User IP and DX Users connected to peripheral devices via the DX Central.

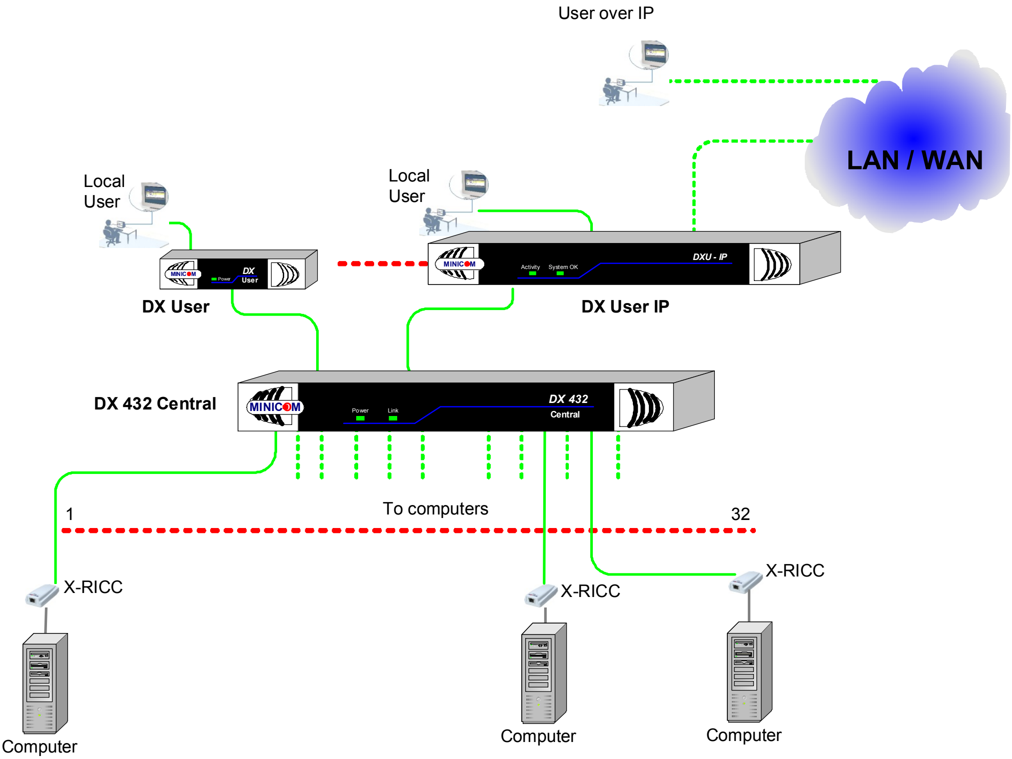


Figure 1 DX User IP usage scenario

3. Features of DX User IP

- KVM (keyboard, video, mouse) access over IP or analogous telephone line.
- Automatically senses video resolution for best possible screen capture
- High-performance mouse tracking and synchronization
- Connect a user console for direct access to KVM switch
- Local Mouse suppression (only when using SUN's Java Virtual Machine)

DX User IP supports PS/2 type keyboards and mice and HD 15 video output. See the pin assignments in Appendix C.

4. DX User IP components

The DX User IP package consists of:

- DX User IP
- Cables
- Brackets to rack mount the DX User IP
- Marketing & Documentation CD

5. Cables

The DX User IP package contains the following cables.

- CAT5 FTP cable (2M/6Ft)
- Serial cable
- Null Modem cable (2 x DB9 connectors)

6. DX User IP front panel

Figure 2 illustrates the DX User IP front panel.

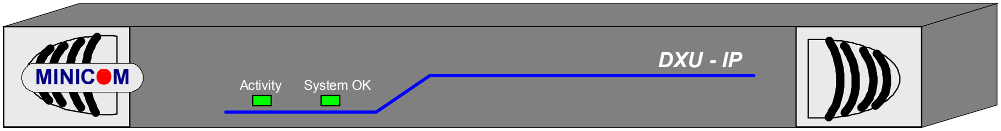


Figure 2 Front panel

The table below explains the functions of the front panel LEDs.

LED	Function
Activity	LED blinks when a remote user operates the DXU IP
System OK	LED solid when DX User IP connected and functioning

7. DX User IP rear panel

Figure 3 illustrates the rear panel of the DX User IP.

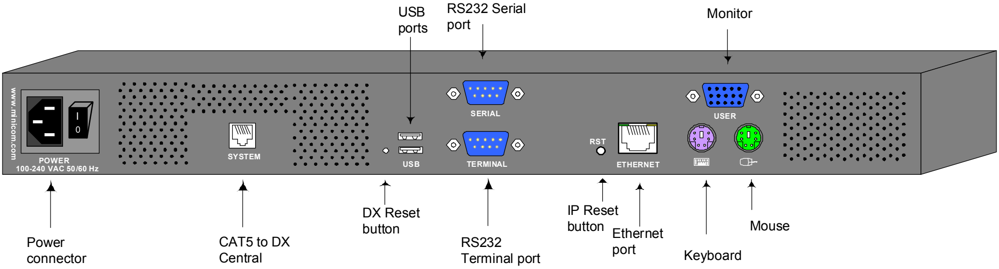


Figure 3 DX User IP rear panel ports

Reset buttons

The DX Reset button resets the DX parts of the DX User IP. The IP Reset button resets the IP parts of the DX User IP.

Serial port

Serial port is used as follows:

- Serial output for modem dial in connection
- Serial pass-through via Telnet
- Initial configuration

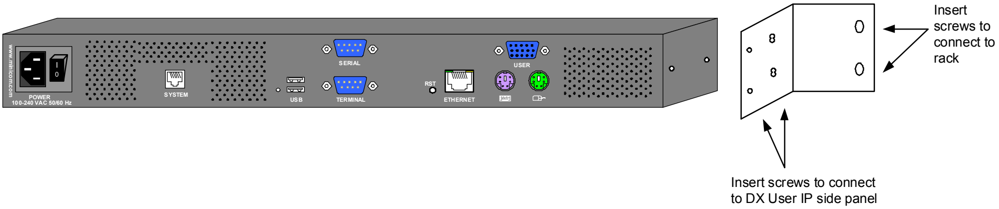
Terminal port

When there are X-RICC RS232s in the DX system, you can control them through an RS232 terminal connected to the DX User IP.

Ethernet - Connects the DX User IP to an Ethernet network.

8. Rack mounting the DX User IP

Use the L-shaped brackets and screws provided to mount the DX User IP on a server rack as illustrated below.



Insert screws to connect to rack

Insert screws to connect to DX User IP side panel

Figure 4 Connecting the L-shaped brackets

9. Pre-installation guidelines

- Switch off all computers
- Place cables away from fluorescent lights, air conditioners, and machines that are likely to generate electrical noise
- The maximum distance between each device (computer, KVM switch or second level DX Central) and the DX Central is 100m/330ft. The maximum distance between the DX Central and the DX User IP is also 100m/330ft.

10. Mouse synchronization limitations

The following will help ensure proper mouse synchronization between the host and client computers.

Vendor-specific Mouse drivers

Special vendor-specific Mouse drivers disrupt the synchronization process. Ensure these are not on the host system.

Accelerated mice

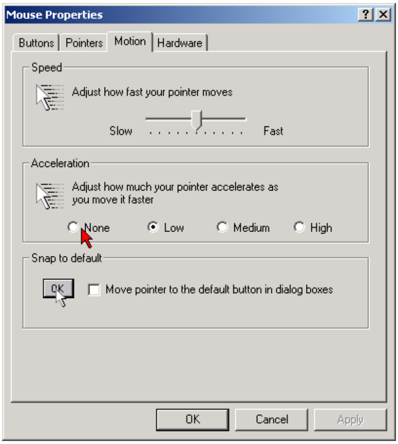
DX User IP does not work with accelerated mice. You must disable mouse acceleration on all computers connected to the system. This is explained below for Windows 2000 Pro, 2000 Server, XP and 2003 Server. To disable mouse acceleration for other Operating Systems, see Appendix D on page 67.

Windows 2000 Pro and 2000 Server

Deactivate **Mouse Acceleration**.

To do so:

From the **Control Panel** select **Mouse**. Select the **Motion** tab. See Figure 5.



Speed

Adjust how fast your pointer moves

Acceleration

Adjust how much your pointer accelerates as you move it faster

○ None ● Low ○ Medium ○ High

Snap to default

□ Move pointer to the default button in dialog boxes

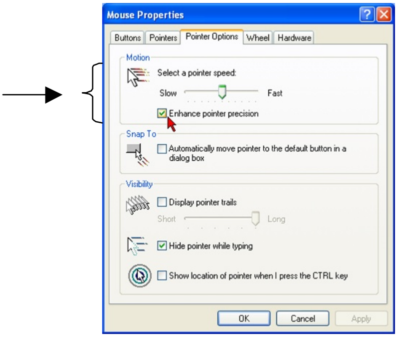
Figure 5 Motion tab

The **Speed** section slider bar must be in the center, and the **Acceleration** section must be set to **None**. Click OK to save changes.

Windows XP and 2003 Server

Deactivate **Enhanced pointer precision**. To do so:

From the **Control Panel** select **Printers and Other Hardware.** Click the **Mouse** icon. The Mouse Properties box appears. See Figure 6. Select the **Pointer Options** tab.



Motion

Select a pointer speed:

☑ Enhance pointer precision

Snap To

□ Automatically move pointer to the default button in a dialog box

Visibility

□ Display pointer trails

☑ Hide pointer while typing

□ Show location of pointer when I press the CTRL key

Figure 6 Pointer tab

The **Motion** section slider bar must be in the center, and the **Enhanced pointer precision** box must be unchecked. Click OK to save changes.

Disable Active Desktop

Disable Active Desktop, or do not use a plain background, use wallpaper.

11. DX User IP connections

Figure 7 below illustrates the connections of the DX User IP to the DX system. See below for more details.

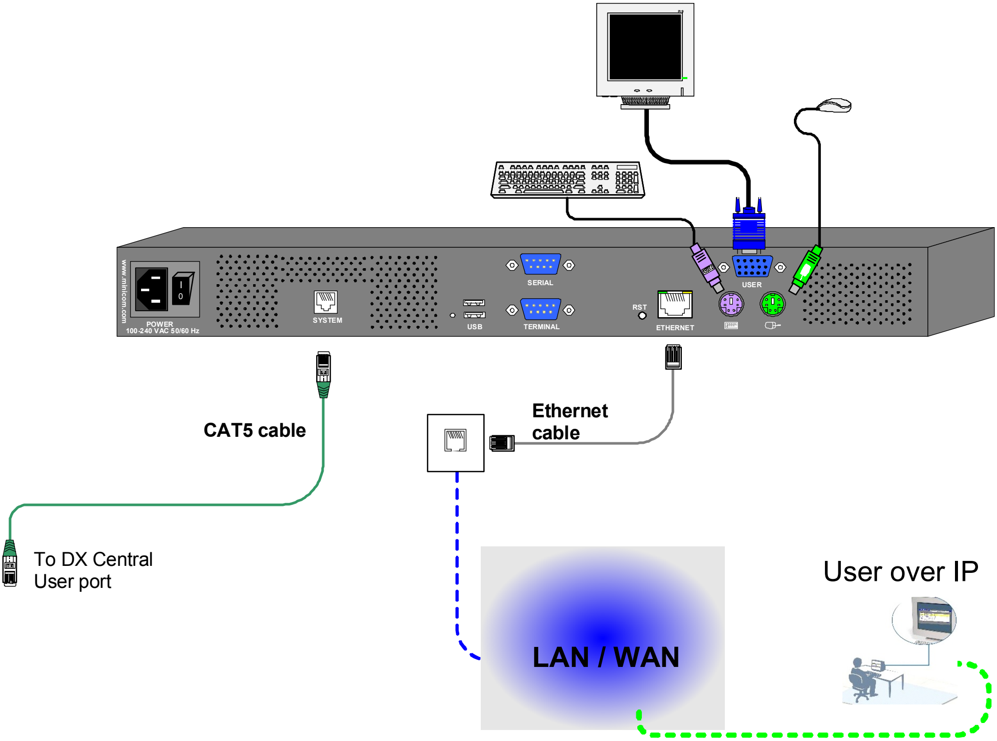


Figure 7 DX User IP connections

12. Connecting the DX User IP to the Wan/LAN

The Ethernet connector on the DX User IP can be used either for a 100 Mbps 100BASE-TX connection or for a 10 Mbps 10BASE-T connection. The adapter adjusts to the appropriate operation mode automatically.

To connect to a LAN/WAN, connect an Ethernet cable as illustrated in Figure 7. For the Ethernet - RJ 45 connector pin-out see Appendix C.

10 Mbps connection

For 10BASE-T Ethernet networks, the Fast Ethernet adapter uses Category 3, 4, or 5 UTP/FTP cable. To establish a 10 Mbps connection, the cable must be connected to a 10BASE-T hub. Ensure the cable is wired appropriately for a standard 10BASE-T adapter. Align the RJ-45 plug with the notch on the adapter's connector and insert it into the adapter's connector.

100 Mbps connection

For 100BASE-TX Fast Ethernet networks, the DX User IP supports Category 5 UTP cabling. To establish a 100 Mbps connection, the cable must be connected to a 100BASE-TX hub.

1. Make sure that the cable is wired appropriately for a standard 100BASE-TX adapter.
2. Align the RJ-45 plug with the notch on the adapter's connector and insert it into the adapter's connector.

Note! The UTP/FTP wire pairs and configuration for 100BASE-TX cable are identical to those for 10BASE-T cable when used with Category 5 UTP/FTP cable.

13. Local User

To use the DX User IP locally, connect a keyboard, video and mouse as illustrated in Figure 7.

14. Connecting an RS232 terminal

Connect the RS232 terminal to the DX User as illustrated in the figures below.

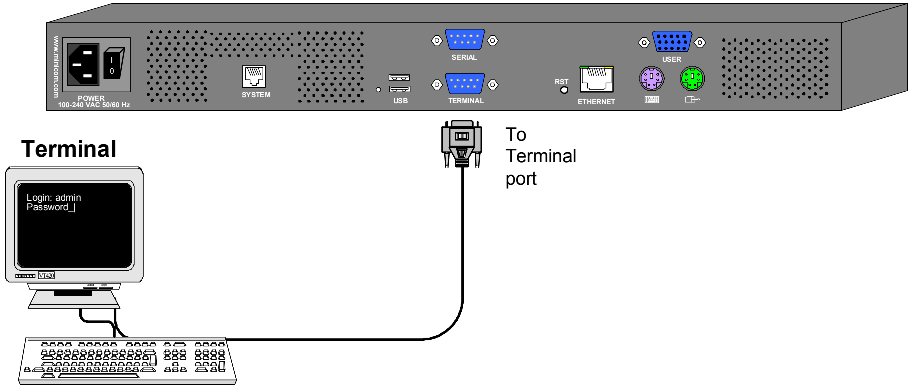


Figure 8 Connecting the RS232 terminal

For the Serial SUB-D 9 connector pin-out see Appendix C.

15. Order of powering on

Connect the DX User IP to the power supply using the power cord provided.

The devices and servers can be powered on at any time. Power on the DX components in the following order:

1. The primary and secondary level DX Centrals.
2. The DX User and DX User IP units.

16. Configuring the system

The DX User IP's communication interfaces are based on TCP/IP, and it comes configured with the values listed below.

- DHCP - disabled
- IP address - 192.168.1.22
- Net mask - 255.255.255.0
- Default Gateway - None

If the above values are unsuitable, you can change the IP configuration. This can be done in a number of ways as set out below. We recommend configuring a fixed IP address to the DX User IP. You can find the MAC address on the IP Extender's underside.

Configuration via DHCP server

If you activate DHCP, DX User IP tries to contact a DHCP server on the network. The DHCP server provides a valid IP address, gateway address and subnet mask. If the DHCP connection fails on boot up, DX User IP boots with the last known IP configuration.

Configuration via local console

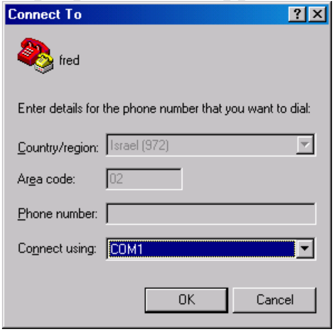
There are 3 ways of configuring via local console:

- Serial connection
- Ethernet Crossover connection
- IP Device Setup utility

Via Serial connection

Connect the NULL modem cable to the computer and to DX User IP’s Serial 1 port. Use any Terminal software to connect to DX User IP. The screen shots below use Windows Hyperterminal.

1. Choose Start/Programs/Accessories/Communications/Hyperterminal.
2. When prompted enter a name and click OK. The Connect To box appears. See Figure 9.
3. Fill in the connection details. Select COM 1 in the Connect using box and click OK. The COM 1 properties box appears. See Figure 10.


Connect To

fred

Enter details for the phone number that you want to dial:

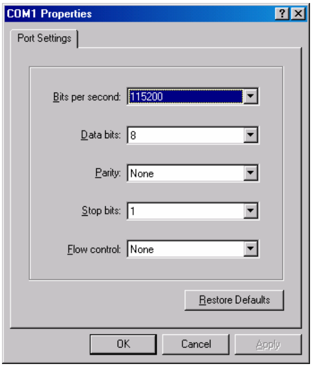
Country/region: Israel (972)

Area code: 02

Phone number:

Connect using: COM1

Figure 9 Connect To box


COM1 Properties

Port Settings

Bits per second: 115200

Data bits: 8

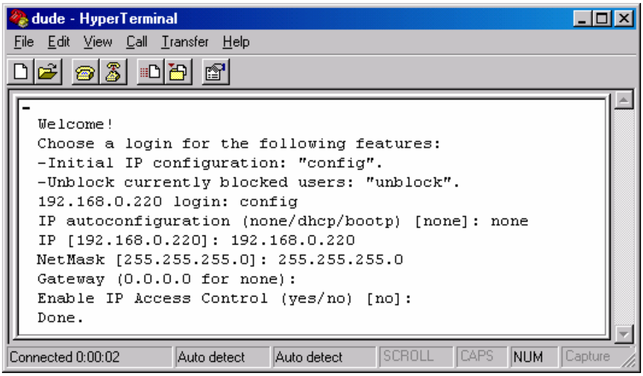
Parity: None

Stop bits: 1

Flow control: None

Figure 10 COM 1 Properties box

4. Set the port settings to the following values:
    - Bits/second - 115200
    - Data bits - 8
    - Parity - None
    - Stop bits - 1
    - Flow Control - None
5. Click OK. The Hyperterminal appears. See Figure 11.



```
-
 Welcome!
 Choose a login for the following features:
 -Initial IP configuration: "config".
 -Unblock currently blocked users: "unblock".
 192.168.0.220 login: config
 IP autoconfiguration (none/dhcp/bootp) [none]: none
 IP [192.168.0.220]: 192.168.0.220
 NetMask [255.255.255.0]: 255.255.255.0
 Gateway (0.0.0.0 for none):
 Enable IP Access Control (yes/no) [no]:
 Done.
```

Figure 11 The Hyperterminal

6. Press **Enter**. Some device information and a prompt appear.
7. Type **config** and press **Enter**. Configuration questions appear. DHCP must be disabled. You can change the IP address, net mask and default gateway. Pressing **Enter** without entering values keeps the default values. To contact DX User IP from outside the LAN, configure a gateway. To remove an already configured gateway, type 0.0.0.0.

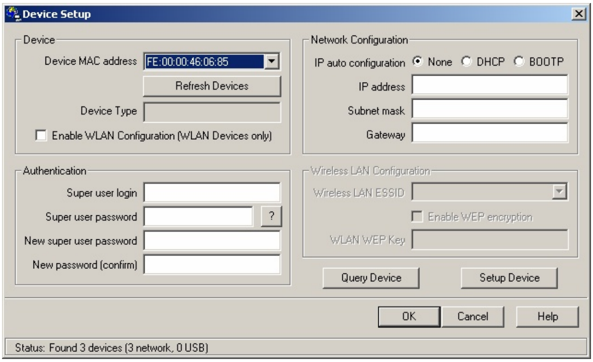
    The last question – enable IP access control – concerns switching IP packet filtering on or off. This can re-enable access to DX User IP after an incorrect IP access configuration has been activated. Page 44 has more information on IP access control.
8. Confirm the settings. DX User IP resets the configuration.

Via Ethernet Crossover connection

Connect an Ethernet Crossover cable to the DX User IP and to the computer back-to-back, the DX User IP is configured to 192.168.1.22, configure your computer to use a static IP in that range. For example 192.168.1.10. Open your browser and type **192.168.1.22**. Configure the device via the WEB interface.

Via the IP Device Setup utility

The IP Device Setup utility is located on the supplied CD under Customer Support/Utilities. Click the IP Device Setup Figure 12 appears.



Device Setup

Device

Device MAC address: FE:00:00:46:06:85

Device Type:

□ Enable WLAN Configuration (WLAN Devices only)

Network Configuration

IP auto configuration: ● None ○ DHCP ○ BOOTP

IP address:

Subnet mask:

Gateway:

Authentication

Super user login:

Super user password:

New super user password:

New password (confirm):

Wireless LAN Configuration

Wireless LAN ESSID:

□ Enable WEP encryption

WLAN WEP Key:

Status: Found 3 devices (3 network, 0 USB)

Figure 12 IP Device Setup utility

The utility locates DX User IP devices on the network and configures them to use a static IP / DHCP / or Bootp configuration. You can also configure a new password for the IP device. All other configurations must be done via the Serial / Web interface methods.

17. The DX User IP system interface

Operate the DX User IP system through one of the following interfaces:

1. HTTP/HTTPS - Any standard Web browser. Depending on the Web browser, you can access the DX User IP card using the unsecured HTTP protocol or, in case the browser supports it, the encrypted HTTPS protocol. We recommend using HTTPS when possible.

3. Telnet - Use a standard Telnet client to access an arbitrary device connected to one of the DX User IP's serial ports via a terminal mode.

2. SNMP (Simple Network Management Protocol) - Any standard SNMP client can use this protocol.

All the above interfaces are accessed using the TCP/IP protocol. They can thus be used via the built-in Ethernet adapter or modem.

This section deals with the HTTP interface. The other two interfaces are explained on pages 19 and 45.

The Web browser must come with a Java Runtime Environment version 1.1 or higher. Without Java support, you can still maintain the remote host system using the administration forms displayed by the browser.

We recommend the following browsers for an unsecured connection:

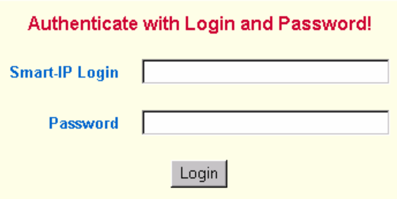
- For Windows 98, ME, 2000 and XP, Microsoft Internet Explorer 5.0 or higher
- For Windows 98, ME, 2000, and XP, Linux and other UNIX like operating systems Netscape Navigator 7.0 or Mozilla 1.0

To access the remote host system using a securely encrypted connection you need a browser that supports the HTTPS protocol. Strong security is only assured by using key length of 128 Bit. We recommend the following browsers.

- Microsoft Internet Explorer version 5.5 or higher with Windows 98, ME, 2000 and XP
- Netscape Navigator 7.0 or Mozilla 1.0 with Windows 98, ME, 2000, and XP, Linux and other UNIX like operating systems

18. Logging in

Type the IP address into the Web browser. Either http://192.168.1.22 for an unsecured connection. Or https://192.168.1.22 for a secured connection. The Login screen appears. See Figure 13



Authenticate with Login and Password!

Smart-IP Login

Password

Figure 13 The Login screen

Initially there is only one user who has unrestricted access to all DX User IP features. Type the default Login name ‘super’ and Password ‘smart’ and click **Login**. The DX User IP Home page appears. See Figure 14.

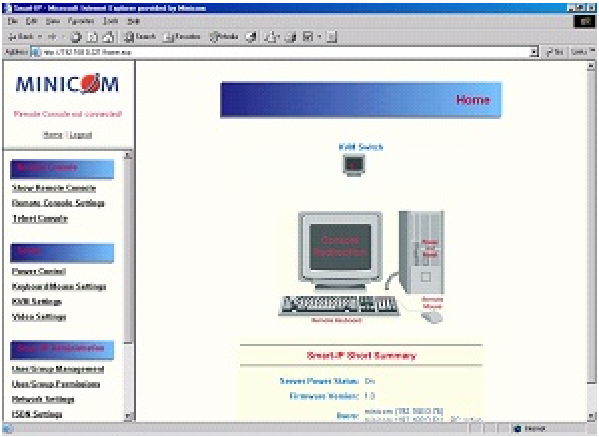


Figure 14 The DX User IP Home page

19. Timeout

After half an hour of non-activity the system automatically logs out. Clicking anywhere on the screen will lead back to the Login screen.

20. The Work area

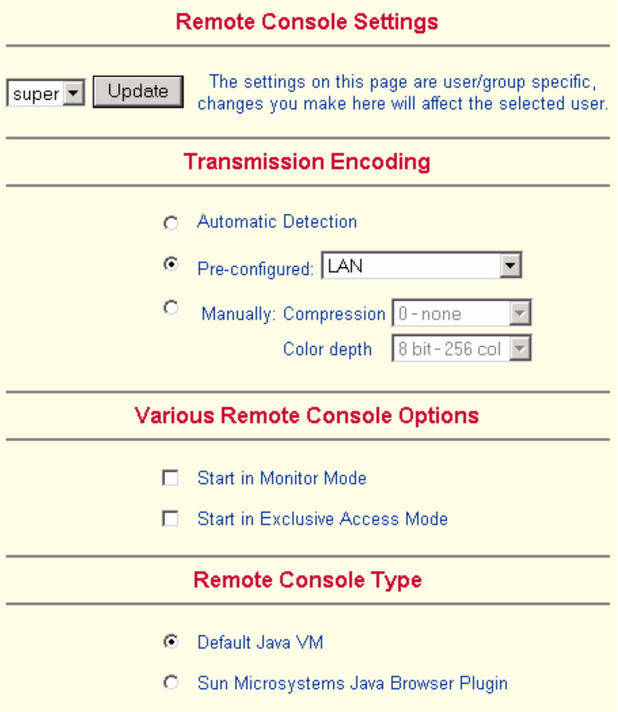
The Work area has a short summary about your DX User IP.

- Server Power Status - On or Off
- Firmware Version - installed on your DX User IP
- Device management – self managed or connected to a management device
- Users - all currently logged in users and IP addresses. (Note: when connected through a proxy server the IP address will be that of the proxy server).

  RC – Remote Control open. **Exclusive** – Exclusive mode. **Idle** – time since last activity.

21. Remote Console Settings

Before connecting to the remote console you must configure all required settings. To do so, from the DX User IP Menu click Remote Console Settings. The Remote Console Settings window appears. See Figure 15.



Remote Console Settings

super ▾ Update The settings on this page are user/group specific, changes you make here will affect the selected user.

Transmission Encoding

○ Automatic Detection

● Pre-configured: LAN ▾

○ Manually: Compression 0 - none ▾

Color depth 8 bit - 256 col ▾

Various Remote Console Options

□ Start in Monitor Mode

□ Start in Exclusive Access Mode

Remote Console Type

● Default Java VM

○ Sun Microsystems Java Browser Plugin

Figure 15 The Remote Console Settings

All settings are user specific. Choose a user from the Drop-down menu.

Transmission Encoding

Transmission Encoding optimizes the speed of the remote screen depending on the number of parallel users and the bandwidth of the connection line.

Automatic Detection - The encoding and the compression level is determined automatically from the available bandwidth and the current content of the video image.

Pre-configured – Choose the connection method.

Manually: Compression - For low bandwidth connections. 1 is the lowest and 9 the highest compression rate. The DX User IP takes time to compress the data. This option shouldn't be used when many users want access simultaneously.

Color Depth – The lower the depth the faster the speed.

Various Remote Console Options

Start in Monitor Mode - Check this option to open the Remote Console window in read only mode. (No keyboard or mouse transferred to Host computer).

Exclusive Access- Enables the Exclusive Access mode at Remote Console startup. This forces the Remote Consoles of all other users to close. No one can open the Remote Console until this user disables the Exclusive Access or logs off.

Remote Console Type

Default Java VM – Uses your Browser's default Java Virtual Machine. This may be the Microsoft JVM for Internet Explorer or Sun JRE if it is configured this way. Use of the Sun JRE may also be forced (see below).

Sun Microsystems Java Browser Plugin - Uses Sun Microsystems Java Browser Plugin - Sets the administration system's Web browser to use the JRE (Java Runtime Environment) of Sun Microsystems. JRE is used to run the code for the Remote Console window, which is actually a Java Applet. If the Java plug-in is not installed on your system, it will be downloaded and installed automatically. The download is about 15 Mbytes. JRE provides a stable and identical Java Runtime Environment across different platforms. The Remote Console software is optimized for this JRE version and offers wider range of functionality when run in SUN's JRE.

Tip! The software is on the supplied CD. So, if you have a slow Internet connection, pre-install the JRE on your administration machine.

ActiveX control - Use an ActiveX control instead of a Java applet - This is the ActiveX-Control of the KVM Vision Viewer - an application available separately. You must install the viewer on your local system. See the Viewer Guide for further information. This option only works with Microsoft Internet Explorer on Win32 Systems. KVM Vision Viewer is on the supplied CD.

Mouse hotkey - Used for fast mouse synchronization in Double Mouse mode and to free the grabbed mouse when in single mouse mode.

Remote Console Button Keys - Button Keys simulate keystrokes on the remote system that cannot be generated locally. For example `Control + Alt + Delete' on Windows and DOS or `Control + Backspace' on Linux.

Define a new Button Key as follows:

Type the required keys e.g. Ctrl+Alt+Delete. The + sign means that the keys are pressed together. The – sign means the keys are pressed sequentially.

The * sign inserts a pause with a definable duration. See page 25.

To require a confirmation request before keystrokes are sent, write **confirm** at the start. E.g. confirm Ctrl+Alt+Delete.

For a list of key codes and aliases DX User IP recognizes, refer to Appendix B on page 63.

Press **Apply** for the changes to take effect.

Home Page Refresh – Refreshes the DX User IP Home page, so that direct Smart IP Links updates their status.

22. Telnet Console

The Telnet Console offers a Java applet for the Telnet protocol to open a connection to DX User IP. Its main use is the pass through option for the Serial port 1 explained on page 38. The Telnet access has to be enabled in the security settings as well, see page 44. It is also possible to connect with a standard Telnet client.

Access via Telnet

Connect via a standard Telnet client using DX User IP's Telnet server. Use it for passthrough access to a device connected to Serial port 1. Connect any serial device, which offers terminal access via its Serial port and access it using the Telnet interface. Set the Serial port settings according to the requirements of the device – explained on page 39.

Connect to DX User IP in the usual way required by the Telnet client, e.g. in a UNIX shell: `telnet 192.168.1.22` – (The IP address has been replaced by the one that is actually assigned to DX User IP).

Type a username and password when prompted. These are identical to those of the Web interface. The user management of the Telnet interface is controlled just like the Web interface.

Once logged in, the command line appears to type management commands.

The interface supports both the command line and terminal modes. The command line mode is used to control or display some parameters. In terminal mode the passthrough access to serial port 1 is activated (if the serial settings were made accordingly). All inputs are redirected to the device on serial port 1 and the answers appear on the Telnet interface.

Telnet server commands

Click **help** to list the following commands:

cls - Clears screen

quit - Logs out current user and disconnects from the client.

version - Shows all available version numbers

terminal - Starts the terminal passthrough mode for serial port 1. The key sequence `<esc> exit' switches back to command modus.

23. Status via IPMI

The Status via IPMI function shows the current values and the min/max-thresholds of all fans, temperatures and voltages existing in the host system. Change the thresholds by editing the values and pressing Apply.

The first time you call this page, it can take up to two minutes until the sensor data appears.

Note: If IPMI is disabled, Status via IPMI and System Log via IPMI are not available (the menu options are not visible).

24. Event Log via IPMI

The Event Log via IPMI accesses the SEL (System Event Log) repository and reads every entry sequentially. The first time you use this function after starting DX User IP the complete repository has to be read, what may take 1 or 2 minutes.

After reading all entries, DX User IP displays them with their time, sensor and description in accordance with the filter settings. You have the choice between several pre-settings (i.e. last day, last week) or an exact declaration of the start and the end date.

Once you change the filter settings, click `Update' to update the shown entries. If the Get sensor names box is checked, all sensor IDs are shown with their respective names.

The time shown in the log entries is the SEL time, meaning it is independent of the system time. The SEL time is shown at the top of the log table. Click Clear Event Log to delete all entries in the SEL repository.

25. File transfer – Virtual Floppy

This feature does not currently work.

26. Power Control

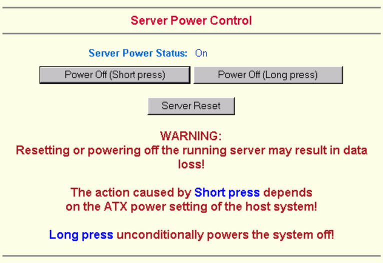
The appearance of the power control window depends on the power control option connected to DX User IP and on the currently activated setting (discussed on page 40). There are 4 options available: Power control disabled. Internal power. External power. Power control via IPMI.

Internal power

Once connected, enable the internal power option using the Serial Port settings on page 40.

The Power Control panel enables access to the most important external buttons of your host system. These buttons are the reset and the ATX power button.

The power button represents the ATX power button on your host system. It is used to switch the power supply on and off. The ATX power button has 2 operation modes: a short press, and a press of about 4 seconds. As shown in Figure 16 these two modes are supported separately. The 2 operation modes are explained in the next section.



Server Power Control

Server Power Status: On

WARNING:
Resetting or powering off the running server may result in data loss!

The action caused by Short press depends on the ATX power setting of the host system!

Long press unconditionally powers the system off!

Figure 16 Internal Power Control

Note: The prerequisite for the remote power/reset button to work is a correct installation of DX User IP.

The Remote reset and power button effects are as follows:

Reset - This is similar to pressing the reset button directly on the remote system. Pressing the reset button will result in a cold start of the system. This might damage open files and the file system itself.

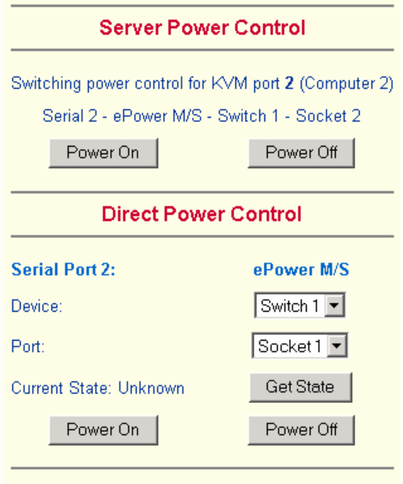
Power (short press) - A short press on the ATX button is normally caught by the running operating system that tries to initiate a controlled shut down. Do this to switch off the system. If this does not work try the long press button.

After pressing, the power state displayed in the administration panel won't immediately reflect the requested change. A controlled shut down of the system may take some minutes. Observe the action caused by your button press using the Remote Console window or by reloading the Server Power Control panel.

Power (long press) - This will unconditionally power off the system. Even if you have submitted a short press before, this will shut down the power supply of the host system. The effect of the long button press can be immediately observed on the panel that is loaded into the browser because of the button press. The power state will be off.

External power

If the external power option is enabled it will look like Figure 17.



Server Power Control

Switching power control for KVM port **2** (Computer 2)

Serial 2 - ePower M/S - Switch 1 - Socket 2

Direct Power Control

Serial Port 2: ePower M/S

Device: Switch 1

Port: Socket 1

Current State: Unknown

Figure 17 External power control

The upper half is used to switch the power for the KVM port currently active. Use the KVM settings – see page 24 - to assign a port of the external power control to a KVM port. If no assignment exists, the option is disabled.

The lower half offers controls for switching each port of the external power control directly. Select the appropriate port and decide whether to power it off or on.

If IPMI is enabled, the power control functions are performed over IPMI requests. This may take a few seconds.

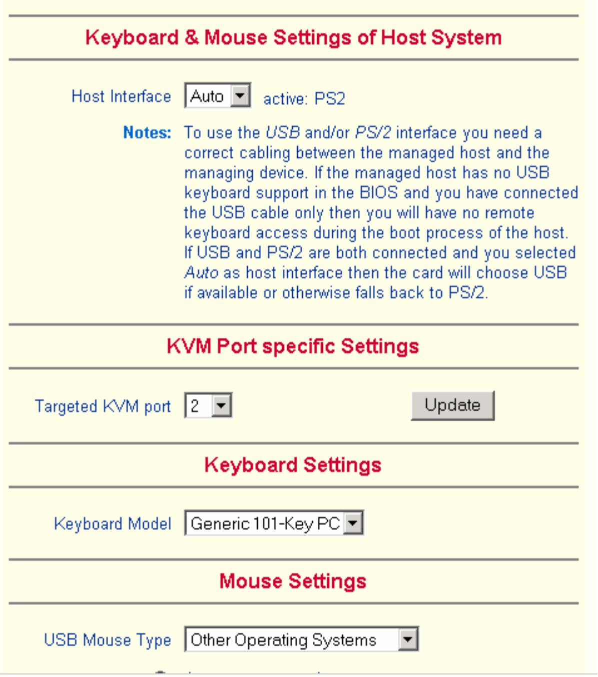
If IPMI is disabled, the power control functions are performed through the internal or external power control options.

27. Keyboard & Mouse Settings

Click Keyboard & Mouse Settings. Figure 18 appears.

To make the remote keyboard and mouse work properly the DX User IP settings for the host's mouse and keyboard types must be correct.

DX User IP supports different keyboard and mouse types.



Keyboard & Mouse Settings of Host System

Host Interface: Auto — active: PS2

Notes: To use the *USB* and/or *PS/2* interface you need a correct cabling between the managed host and the managing device. If the managed host has no USB keyboard support in the BIOS and you have connected the USB cable only then you will have no remote keyboard access during the boot process of the host. If USB and PS/2 are both connected and you selected *Auto* as host interface then the card will choose USB if available or otherwise falls back to PS/2.

KVM Port specific Settings

Targeted KVM port: 2

Keyboard Settings

Keyboard Model: Generic 101-Key PC

Mouse Settings

USB Mouse Type: Other Operating Systems

Figure 18 Keyboard & Mouse Settings

The elements of the Keyboard & Mouse Settings are explained below.

Host Interface – Only Auto or PS/2 are active. USB is for future applications.

Keyboard Model - Choose the keyboard model for the chosen port. Select Generic 106-key PC when connecting to computers with a Japanese OS.

USB Mouse Type – Not active in the system, leave at the default state.

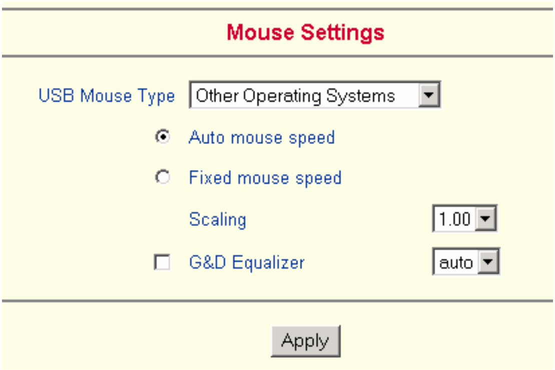
Auto Mouse speed

When Mouse Acceleration on the Host computer is enabled, check **Auto Mouse speed**. We highly recommend disabling the Mouse Acceleration.

Fixed Mouse speed

When Mouse Acceleration on the Host computer is disabled, select Fixed Mouse Speed see Figure 19. Also in the Scaling drop-down menu select 1.00.

Repeat this procedure separately for each Host computer.



Mouse Settings

USB Mouse Type: Other Operating Systems

● Auto mouse speed

○ Fixed mouse speed

Scaling: 1.00

□ G&D Equalizer: auto

Figure 19 Mouse settings

G&D Equalizer – This supports the mouse synchronization for Guntermann & Drunck KVM switches. These switches perform an internal rescaling of the mouse movements, which cause the existing algorithm to break if DX User IP is connected behind such a switch. This option detects the rescaling and compensates for it, so that the mouse synchronization works. Do not select this option for the DX User IP- it may disrupt the normal mouse synchronization.

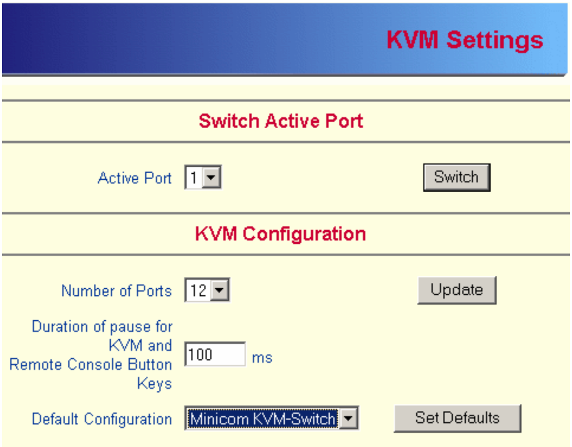
Apply - Click to apply changes

Reset - If the keyboard or mouse seems to react irrationally click to reset the keyboard and mouse emulation. It is like disconnecting and reconnecting the keyboard and mouse connectors.

Adjust keyboard and mouse settings for all DX User IP ports.

28. KVM Settings

By default the DX User IP is configured for 16 ports. When you want to add more, adjust the settings for the KVM ports. From the menu choose KVM Settings. The KVM settings appear. See Figure 20.



KVM Settings

Switch Active Port

Active Port: 1

Switch

KVM Configuration

Number of Ports: 12

Update

Duration of pause for KVM and Remote Console Button Keys: 100 ms

Default Configuration: Minicom KVM-Switch

Set Defaults

Figure 20 KVM Settings

The elements of the KVM Settings are explained below.

Active Port

To switch to a computer:

1. Choose a number in the Active port Drop-down list.
2. Press Switch. The computer screen appears in the Remote Console.

Number of Ports

To set the number of ports the KVM uses:

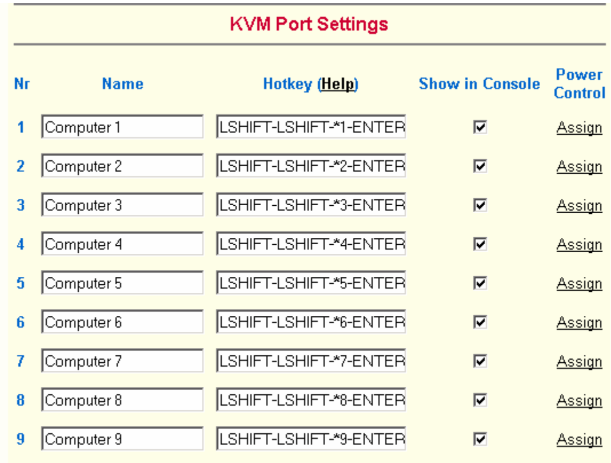
1. Choose a number in the Number of Ports Drop-down list.
2. Press Update. The number of rows chosen appears in the KVM Port Settings list. See Figure 21.

Duration of Pause

Define the pause time for KVM and Remote Console Button Keys in milli-seconds, represented by the * symbol in all hotkeys and button keys.

Default configuration

This is explained in the section below.



KVM Port Settings

Nr	Name	Hotkey (Help)	Show in Console	Power Control
1	Computer 1	LSHIFT-LSHIFT-*1-ENTER	☑	Assign
2	Computer 2	LSHIFT-LSHIFT-*2-ENTER	☑	Assign
3	Computer 3	LSHIFT-LSHIFT-*3-ENTER	☑	Assign
4	Computer 4	LSHIFT-LSHIFT-*4-ENTER	☑	Assign
5	Computer 5	LSHIFT-LSHIFT-*5-ENTER	☑	Assign
6	Computer 6	LSHIFT-LSHIFT-*6-ENTER	☑	Assign
7	Computer 7	LSHIFT-LSHIFT-*7-ENTER	☑	Assign
8	Computer 8	LSHIFT-LSHIFT-*8-ENTER	☑	Assign
9	Computer 9	LSHIFT-LSHIFT-*9-ENTER	☑	Assign

Figure 21 KVM Port Settings

29. KVM Port Settings

1. Assign names for each port.

2. Define hotkeys to switch to each port.

Choose either Minicom default hotkeys by selecting Minicom KVM-Switch in the Default configuration box, and then click the Set Defaults button.

Or choose your own hotkeys. The syntax to define a new hotkey is as follows: <keycode> [+ | - | *] <keycode>.

For example LShift-LShift-*1-Enter. A + sign means that the keys are pressed together. The – sign means the keys are pressed sequentially. Lshift means the left Shift key.

The * sign inserts a pause with a definable duration. Add more than one pause if necessary. See Appendix B on page 63 for a list of key codes.

3. Press **Apply** at the bottom of the page. The settings are saved.

DX User IP uses separate mouse synchronization settings - see page 58 - and video-settings - see page 57 - for each port.

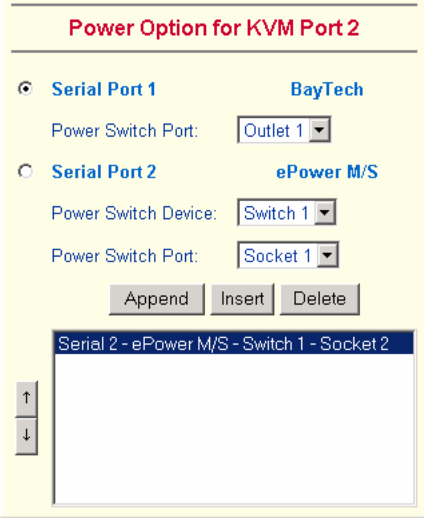
Note:

It is still possible to apply OSD key combinations through the Remote Console for switching the KVM port. However, video and mouse synchronization settings will be shared among the ports and may be unintentionally changed for one of those ports.

If an external power option is enabled it is possible to assign a port of this control for power switching to each KVM port, see page 20.

Show in console – check this option to have a button with the port name appear on the top of the Remote console. Click the button to switch to that computer.

Power Control – Click Assign to configure the power option for each port. The following screen appears.



Power Option for KVM Port 2

● Serial Port 1 BayTech

Power Switch Port: Outlet 1

○ Serial Port 2 ePower M/S

Power Switch Device: Switch 1

Power Switch Port: Socket 1

Serial 2 - ePower M/S - Switch 1 - Socket 2

Figure 22 Power option

Select the Serial port to which Power switch is connected.

From the drop-down list select the outlets connected to the Power switch.

Appending a socket

Click Append to add the socket to the end of the list (it will be last to be powered on/off).

Inserting a socket

To insert a socket in the list:

1. In the currently included socket list highlight the socket above which you want to insert the new socket.
2. From the Drop-down list select the socket to be inserted.
3. Click Insert. The new socket is added.

Each selection adds the outlet to the list at the bottom. The order of powering off/on, will be the order as set out in this list.

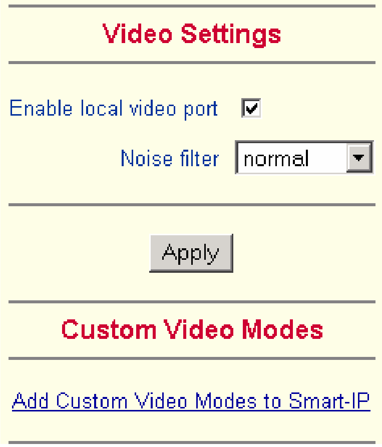
Changing the order

To change the order the outlets are powered on/off:

Highlight the desired outlet and move it using the arrows.

30. Video Settings

From the menu choose Video Settings. The Video settings appear. See Figure 23.



Video Settings

Enable local video port ☑

Noise filter normal

Custom Video Modes

Figure 23 Video Settings

Enable local video port

This option decides if the video output on the local monitor connected to DX User IP is active and passing through the incoming signal from the host system.

Use this option to switch off the local monitor connected to DX User IP when accessing sensitive information on the Host computer.

Noise filter

Define how DX User IP reacts to small changes in the video input signal. A large tolerance needs less network traffic and leads to a faster video display, but small changes in some display regions may not be recognized immediately. A small tolerance displays all changes instantly but may lead to a constant amount of network traffic even if display content is not really changing (depending on the quality of the video input signal). The default setting should be suitable for most situations.

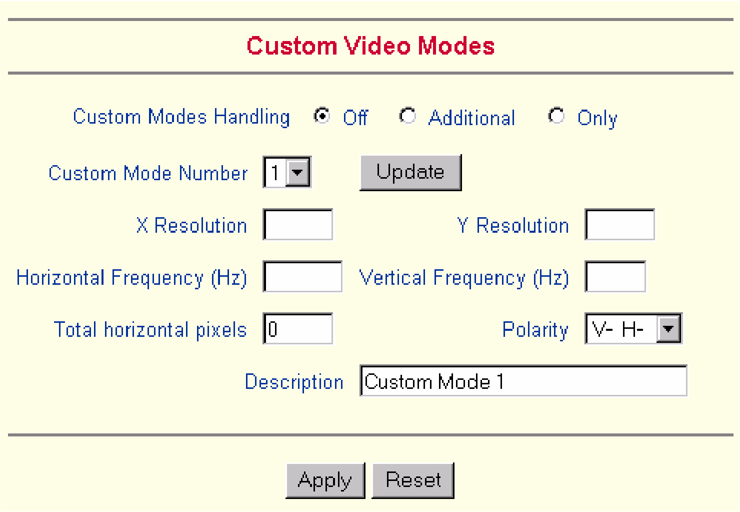
Custom Video Modes

DX User IP recognizes a limited number of common video modes. When running X-Window on the host system, don't use any custom modelines with special video modes. If you do, DX User IP may not be able to detect these. Use any standard VESA video mode. Refer to Appendix A on page 62 for a list of all known modes. If your video mode differs from the standard VESA video mode, you can add up to 4 Custom Video Modes.

Add video modes to DX User IP, which are not recognized using the factory settings, when for example using special modelines in an X-Window configuration on the host or with uncommon hosts or operating systems.

Click Add Custom Video Modes. The Custom Video Modes window appears see Figure 24.

Note! This option may affect the correct video transmission and is for advanced users only.



Custom Video Modes

Custom Modes Handling ● Off ○ Additional ○ Only

Custom Mode Number: 1

X Resolution:

Y Resolution:

Horizontal Frequency (Hz):

Vertical Frequency (Hz):

Total horizontal pixels: 0

Polarity: V- H-

Description: Custom Mode 1

Figure 24 Custom Video Modes window

Custom Modes Handling – switch custom modes off, or use in addition to the standard video resolutions, or use exclusively **- Only**. With **Only** you can force a special video mode for DX User IP.

To change the parameters for a mode, choose the number and press **Update**.

X Resolution - Visible number of horizontal pixels.

Y Resolution - Visible number of vertical pixels.

Horizontal Frequency (Hz) - Horizontal (line) frequency.

Vertical Frequency (Hz) - The vertical (refresh) frequency.

Total horizontal pixels - The total amount of pixels per line, including non-visible and blank areas.

Polarity - The polarity (positive/negative) of the synchronization signals. V means vertical, H means horizontal.

Description Give the mode a name. The name appears in the Remote Console when the custom mode is activated.

31. User/Group Management

From the menu choose User/Group Management. The User/Group Management settings appear. See Figure 25. Both users and groups are configurable, meaning that each user or group can have different access capabilities.

Note! These users and groups are for the IP options only and are different from the users and groups configured in the DX system.

The DX User IP is factory set with a supervisor user called **super** with the password ‘smart’. Change the **super** user password immediately.

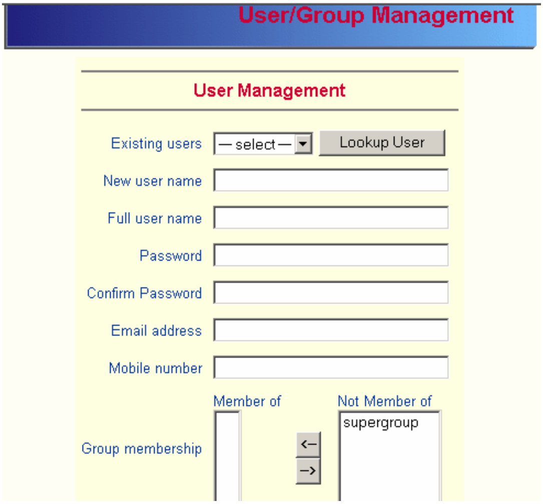


Figure 25 The User/Group Management settings

Existing user

Select an existing user for modification or deletion. Once selected, click Lookup User to see the user information.

New user name

Enter a login name for a new user here. Ensure that it is not the same as an existing user or group.

Full user name

Write the full name of the new user.

Password / Confirm password

The password must be at least four characters. Confirm password.

Email address /Mobile number

These are optional.

Group membership/Member of/Not Member of

Each user can be a member of one or more groups and inherit the rights of that group. Use the arrows to add or remove a user from a group.

Existing groups

Select an existing group for copying, modification or deletion.

New group name

To create a new group, enter a new group name.

Create User button

Once the required fields are filled in, click the Create User button to create a new user.

Delete User button

To delete a user:

1. Select a user in the Existing users Drop-down list.
2. Click the Lookup button. The complete user information appears.
3. Click the Delete User button.

Note: The factory set supervisor user `super' cannot be deleted, but it can be renamed.

Modify User button

To modify a user:

1. Select a user in the Existing users Drop-down list.
2. Click the lookup button to get all the user's information.
3. All fields can be modified as required. The old password is not displayed, but can be modified.
4. Click the Modify User button.

Copy User

To copy an existing user's properties to a new user:

1. Select a user in the Existing user Drop-down list.
2. Enter a new user name in the New user name box.
3. Click the Copy User button. All properties of the selected user will be copied to the new one, except user specific permissions.

Group Management

The following headings appear under Group Management.

Create group button

To create a group:

1. Type a name into the New group name box
2. Click the Create group button.

Delete Group button

To delete a group:

1. Select a group in the Existing groups Drop-down list.
2. Click the Delete group button.

Modify Group

To modify an existing group select the group in the Existing group control. The group's name field can be modified. Finally click the Modify group button.

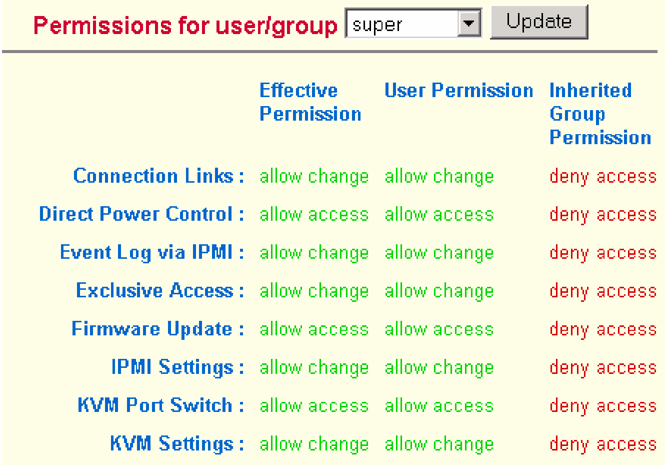
Copy Group

To create a group with the properties of an existing group:

1. Select a group in the Existing group Drop-down list.
2. Type a name into the New group name box.
3. Click the Copy Group button.

32. User/Group Permissions

From the DX User IP Menu choose User/Group Permissions. The User/Group Permissions settings appear. See Figure 26.



Permissions for user/group super Update

	Effective Permission	User Permission	Inherited Group Permission
Connection Links :	allow change	allow change	deny access
Direct Power Control :	allow access	allow access	deny access
Event Log via IPMI :	allow change	allow change	deny access
Exclusive Access :	allow change	allow change	deny access
Firmware Update :	allow access	allow access	deny access
IPMI Settings :	allow change	allow change	deny access
KVM Port Switch :	allow access	allow access	deny access
KVM Settings :	allow change	allow change	deny access

Figure 26 User/Group Permissions

Each user or group has a set of access rights to the DX User IP functions. The user **super** always has unalterable full access rights. A newly created user has the access rights of all groups he belongs to.

You can change the access rights in the User/Group Permissions panel. The panel shows the changes to the access rights inherited by the user's ancestors only. This means an empty user permission list has exactly the same access rights as the groups he belongs to.

When one user creates a new user, he can alter his access rights. A user can change another user or group's access rights if he stands higher in hierarchy. The 'super' user stands at the top of the hierarchy, and can change everybody's access rights.

A user can never give more access rights than he himself has but he can always reduce the access rights.

To change access rights:

1. From the Drop down list select a user/group. The selection list shows only users and groups, which you have the right to change.
2. Click the Update button. The access rights of the user appear. The meaning of the Permissions is as follows:

Viewing a field. allow view means you can view it. deny access means you cannot view it.

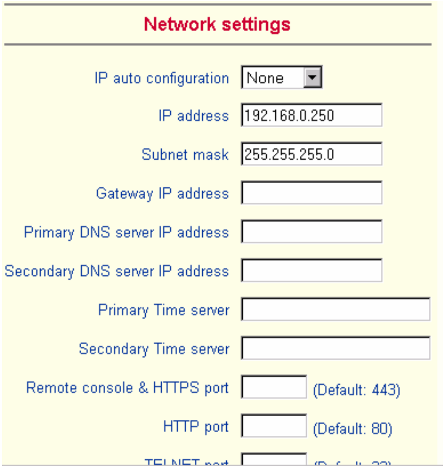
Changing a field setting. Allow change means you can change it. (This doesn't give an automatic right to view the value, the allow view value must also be set). Deny change means you cannot change it.

Using a function. allow access means you can use it. deny access means you cannot use it.

3. Select the desired permission and click **Apply**.

33. Network Settings

From the DX User IP Menu choose Network Settings. The Network Settings appear. See Figure 27.



Network settings

IP auto configuration	None
IP address	192.168.0.250
Subnet mask	255.255.255.0
Gateway IP address	
Primary DNS server IP address	
Secondary DNS server IP address	
Primary Time server	
Secondary Time server	
Remote console & HTTPS port	(Default: 443)
HTTP port	(Default: 80)
TELNET port	(Default: 23)

Figure 27 The Network Settings

In the Network Settings panel you can change the network parameters.

The initial IP configuration is usually done directly at the host system. However you can also connect to the DX User IP using its pre-configured IP settings.

Warning! Changing the network settings of DX User IP may result in losing the connection. If you remotely change the settings ensure that all values will give you access to the DX User IP.

IP auto configuration

Choose between the 3 options.

None – no IP auto configuration. In this case type a static IP address in the appropriate settings below.

DHCP - When selected, DX User IP will contact a DHCP (Dynamic Host Configuration Protocol) server in the local sub-net to obtain a valid IP address, gateway address and net mask. Before you connect DX User IP to your local sub-net, complete the corresponding configuration of your DHCP server.

BOOTP - When selected, DX User IP will contact a BOOTP (Bootstrap Protocol) server in the local sub-net to obtain a valid IP address, gateway address and net mask.

IP address

Static IP address in the usual dot notation.

Subnet mask

The net mask of the local network.

Gateway IP address

In case the DX User IP should be accessible from networks other than the local one, this IP address must be set to the local network router's IP address.

Primary DNS Server IP address

IP address of the primary Domain Name Server. This may be left empty, however DX User IP won't be able to perform name resolution.

Secondary DNS Server IP address

This address will be used in case the Primary DNS Server can't be contacted.

Primary Time Server

IP address of the primary NTP (Network Time Protocol) compliant timeserver. DX User IP will synchronize its own absolute time with the timeserver's one. This is important for writing log entries and for the Dynamic DNS Service.

Secondary Time Server

This address will be used in case the Primary Time Server can't be contacted.

Remote Console & HTTPS port

Port number at which DX User IP's Remote Console server and HTTPS server are listening. If empty the default value is used.

HTTP port

Port number at which DX User IP's HTTP server is listening. If empty the default value is used.

Telnet port

Port number at which DX User IP's Telnet server is listening. If empty the default value is used.

Bandwidth limitation

The maximum network traffic generated through the DX User IP Ethernet device.

Disable Setup Protocol

Exclude the DX User IP from the setup protocol.

34. Dynamic DNS

Use the free Dynamic DNS service at www.dyndns.org. See Figure 28.

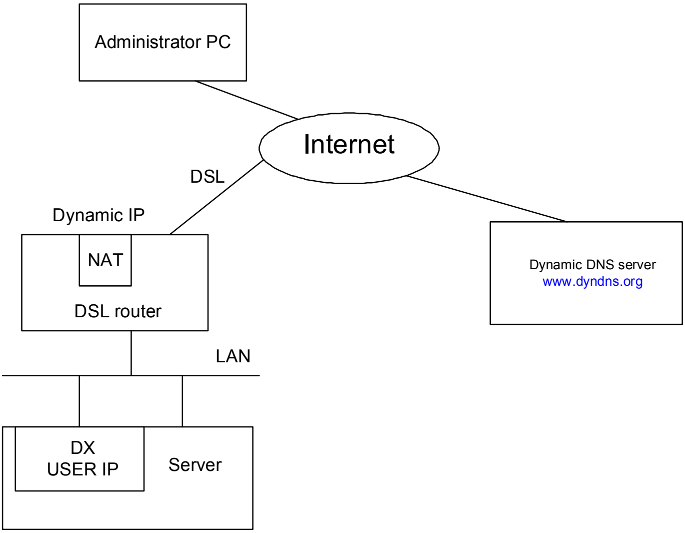


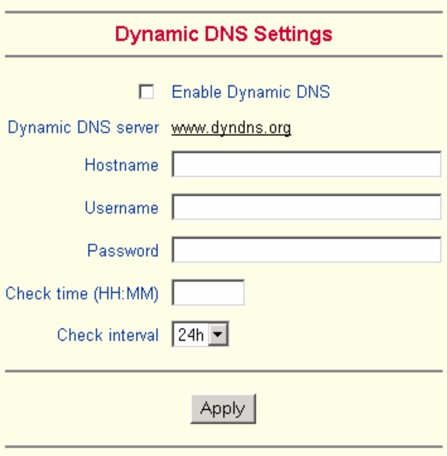
Figure 28 Dynamic DNS scenario

DX User IP is reachable via the IP address of the DSL router, which is dynamically assigned by the provider. Since the administrator doesn't know the IP address assigned by the provider, DX User IP connects to a special dynamic DNS server in regular intervals and registers its IP address there. The administrator can contact this server as well and pick up the same IP address belonging to his card.

The administrator has to register a DX User IP that is supposed to take part in the service with the Dynamic DNS Server. He will get an approved nickname and password in return to the registration process. This account information is needed in order to determine the IP address of the registered DX User IP.

To enable the Dynamic DNS:

1. Ensure the DX User IP LAN interface is properly configured.
2. From the DX User IP menu choose Network Settings / Dynamic DNS. The Dynamic DNS Settings appear. See Figure 29.



Dynamic DNS Settings

☐ Enable Dynamic DNS

Dynamic DNS server www.dyndns.org

Hostname

Username

Password

Check time (HH:MM)

Check interval 24h

Figure 29 Dynamic DNS Settings

3. Check the Enable Dynamic DNS box.
4. Change the settings as desired.

Hostname - The Hostname registered during manual registration with the Dynamic DNS Server. Spaces are not allowed in the Hostname.

Username/Password – Fill in the Username and Password.

Check time - DX User IP card registers itself in the Dynamic DNS server at this time.

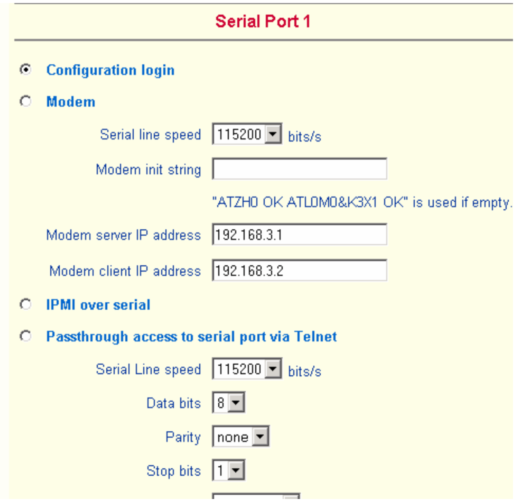
Check interval - Interval for reporting again to the Dynamic DNS server by DX User IP.

DX User IP has its own independent real time clock. Ensure the time setting is correct by configuring a timeserver see page 35.

DX User IP registers itself to the Dynamic DNS server slightly different from the time configured. To reduce load peaks on the server we add a random time (0-10 min) to the absolute time value.

35. Serial Port Settings

From the DX User IP Menu choose Serial Port Settings. The Serial Port Settings appear. See Figure 30.



Serial Port 1

● Configuration login

○ Modem

Serial line speed 115200 bits/s

Modem init string

"ATZH0 OK ATL0M0&K3X1 OK" is used if empty.

Modem server IP address 192.168.3.1

Modem client IP address 192.168.3.2

○ IPMI over serial

○ Passthrough access to serial port via Telnet

Serial Line speed 115200 bits/s

Data bits 8

Parity none

Stop bits 1

Figure 30 Serial Port Settings

In the DX User IP Serial Settings specify the devices connected to the two Serial ports.

Serial Port 1

The port options are listed below

Configuration login –If this option is checked you can only use the port for the initial configuration and no other function.

Modem - DX User IP has the option of remote access using a telephone line. Connect the modem to Serial 1 port. Using a telephone line means building up a dedicated point-to-point connection from your console computer to the DX User IP.

The DX User IP acts as an Internet Service Provider (ISP) to which you can dial in. The connection is established using the Point-to-Point Protocol (PPP).

Before connecting to DX User IP, configure your console computer accordingly. For instance on Windows based operating systems you can configure a dial-up network connection, which defaults to the right settings like PPP.

Serial line speed - Most modems today will support the default value of 115200 bps. For older modems lower the speed.

Modem Init String - Initialization string. The default value works with all modern standard modems connected to a telephone line. For special modems or if connected to a local telephone switch that requires a special dial sequence to connect to the public telephone network, change this setting by giving a new string. See the modem's manual about the AT command syntax.

Modem Server IP address – This address is used only when connecting to DX User IP via a modem. When you dial into the DX User IP the client computer will receive a Modem Client IP address from the DX User IP. Open the Web browser and type Modem server IP address to login to the DX User IP.

The Client IP (see paragraph below) must be in the same class C subnet as the server IP. This subnet should not conflict with the Ethernet subnet on the client side and with the Ethernet subnet on DX User IP Network side.

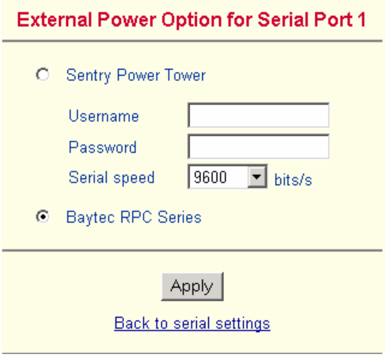
Modem Client IP address - This address is assigned to your console computer during the PPP handshake. Since it is a point-to-point IP connection virtually every IP address is possible but ensure, it is not interfering with the IP settings of DX User IP and your console computer. The default value will work in most cases.

IPMI over Serial - Check to use this Serial port for IPMI 1.5 over serial. See page 47 for more information.

Passthrough access to serial port via Telnet - Connect an arbitrary device to the serial port and access it (assuming it provides terminal support) via telnet. Select the appropriate options for the Serial port and use the Telnet Console (see page 19) or a standard telnet client to connect to DX User IP.

External Power Option – When the **External Power Option** is the Sentry Power Tower or Baytec RPC series connected to Serial port 1, configure it by clicking **change external power switch option**. The External Power Option for Serial port 1 window appears.

Fill in the Username and password as defined by the Sentry Power Tower.



External Power Option for Serial Port 1

○ Sentry Power Tower

Username

Password

Serial speed 9600 bits/s

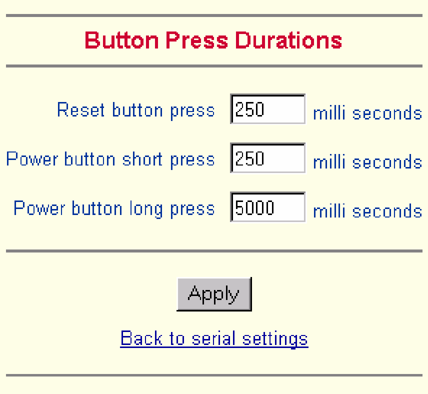
● Baytec RPC Series

Figure 31 External Power Option for Serial port 1

Serial Port 2

This port provides the power control options, see page 20. Choose a suitable setting and fill in additional required options. DX User IP supports the following:

Internal Power Option - This option gives access to the ATX power and reset functions of a single connected system. You can change the duration of each button press. To do so, click Change button press durations. The box below appears. Adjust the time as desired.



Button Press Durations

Reset button press 250 milli seconds

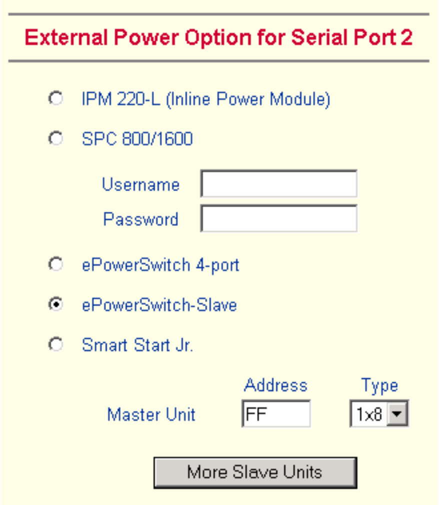
Power button short press 250 milli seconds

Power button long press 5000 milli seconds

Figure 32 Button Press Durations box

External Power Option

To configure the External Power Option connected to Serial port 2, click **change external power switch option.** The following appears.



External Power Option for Serial Port 2

○ IPM 220-L (Inline Power Module)

○ SPC 800/1600

Username

Password

○ ePowerSwitch 4-port

● ePowerSwitch-Slave

○ Smart Start Jr.

	Address	Type
Master Unit	FF	1x8

Figure 33 Serial Port 2 external power option

IPM 220-L (Inline Power Module) - External module option to switch power of a single system by putting it in the power supply line of the controlled system.

SPC 800/1600 - Using the Avocent™ SPC, switch power for more than one system connected to DX User IP through a KVM switch. To use this device enter a username and password, which exist on the SPC and have the privileges to switch power for each port.

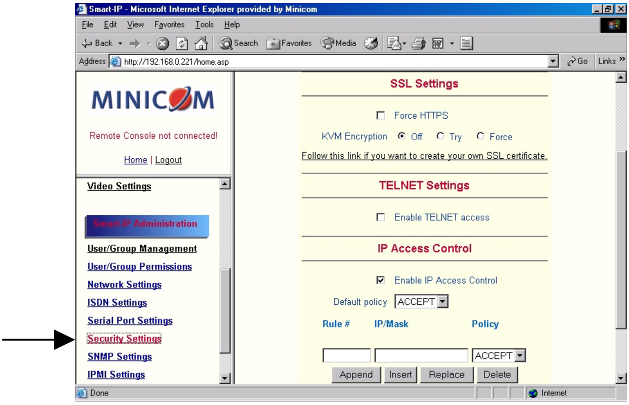
ePowerSwitch 4 port - Using this switch, switch power for more than one system connected to DX User IP through a KVM switch.

ePowerSwitch-Slave – This also refers to the **Minicom DX Power Switch S 8 port**. Both switches are cascadable to up to 4 power switches with 8 ports. DX User IP must be connected to the first switch of the cascade via a serial connection.

Smart Start Jr. – Check the box if this option is connected. Add Slave units if required.

36. Security Settings

From the DX User IP Menu choose Security Settings. The Security Settings appears. See Figure 34.



SSL Settings

□ Force HTTPS

KVM Encryption ● Off ○ Try ○ Force

Follow this link if you want to create your own SSL certificate.

TELNET Settings

□ Enable TELNET access

IP Access Control

☑ Enable IP Access Control

Default policy ACCEPT

Rule #	IP/Mask	Policy
		ACCEPT

Figure 34 Security Settings

SSL settings

Force HTTPS - Access the Web front-end only using an HTTPS connection. DX User IP won't listen on the HTTP port for incoming connections.

KVM encryption - Controls the encrypting of the RFB protocol, used by the Remote Console to transmit the screen data to the administrator machine and keyboard and mouse data back to the host.

Off - No encryption used.

Try - Tries to make an encrypted connection. If unsuccessful, an unencrypted connection is used.

Force - Makes an encrypted connection.

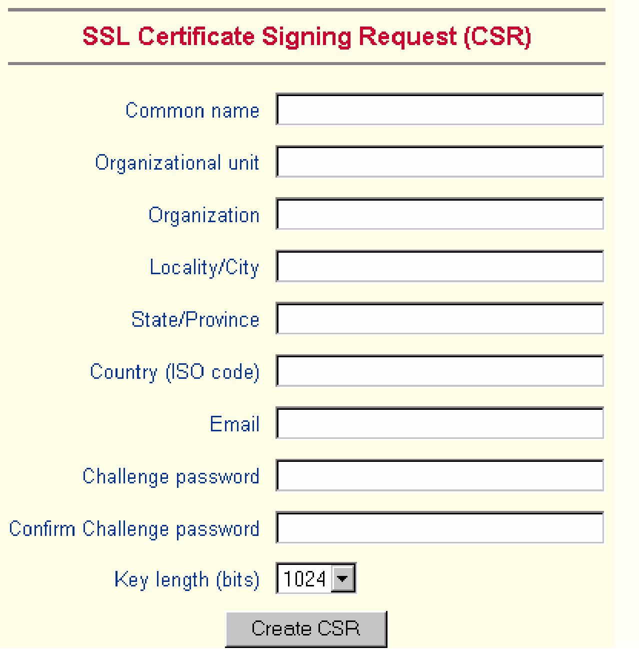
SSL Certificate Management

DX User IP uses the SSL (Secure Socket Layer) protocol for any encrypted network traffic between itself and a connected client. When connecting, DX User IP reveals its identity to a client using a cryptographic certificate. This is the same for all DX User IPs and won't match the network configurations applied to the card by its user. The certificate's underlying secret key is also used for securing the SSL handshake. Hence, this is a security risk (but better than no encryption at all).

You can generate and install a new certificate unique to a particular card. DX User IP can generate a new cryptographic key and the associated Certificate Signing Request that needs to be certified by a certification authority (CA). A CA verifies you are who you claim to be and signs and issues a SSL certificate to you.

To create and install a DX User IP SSL certificate:

1. From the Security Settings page choose **Create your own SSL certificate**. The window appears as in Figure 35.



SSL Certificate Signing Request (CSR)

Common name

Organizational unit

Organization

Locality/City

State/Province

Country (ISO code)

Email

Challenge password

Confirm Challenge password

Key length (bits) 1024

Figure 35 CSR

2. Fill in the fields:

Common name - Network name of DX User IP once installed in the user's network. It is identical to the name that is used to access the card with a Web browser. In case the name given here and the actual network name differ, the browser will pop up a security warning when the card is accessed over HTTPS.

Organizational unit - Specifies which department within an organization DX User IP belongs.

Organization/Locality/City/State/Province - Organization to which DX User IP belongs + location.

Country - Use the 2 letter ISO code, e.g. DE for Germany.

Challenge Password/Confirm- Some certification authorities require a challenge password to authorize later changes on the certificate. The minimum is 4 characters.

Email - Of a security contact person that is responsible for DX User IP.

Key length - Length of the generated key in bits. 1024 Bits are supposed be sufficient for most cases. Larger keys may result in slower response time during the connection.

3. Click Create CSR .
4. Press **Download CSR** to download the CSR to your administration machine.
5. Send the CSR to a CA for certification. They will send a new certificate
6. Press **Upload** to upload the certificate to DX User IP. The certificate uploads.

Important! If you destroy the CSR on DX User IP there is no way to get it back! If you deleted it, repeat the above steps.

Telnet Settings

Enable Telnet access - Access over Telnet client. For better security disable Telnet access.

IP Access Control

This is used to limit access to a specific number of clients only. These clients are identified by their IP addresses.

The IP access control settings apply to the LAN interface only!

Enable IP Access Control - Enables access control based on IP source addresses.

Default policy - Controls arriving IP packets that don't match any of the configured rules. They can be accepted or dropped.

ATTENTION: If you set this to DROP and you have no ACCEPT rules configured, access to the Web front-end over LAN is disabled! To enable access, change the security settings via modem dial in or by temporarily disabling IP access control with the initial configuration procedure (see page 11).

Rule # - Type the rule number for which the following commands will apply. This is ignored, when adding a new rule.

IP/Mask - Specifies the IP address or IP address range for which the rule applies.

Numbers attached to an IP address with a `/' is the number of valid bits that are used for the given IP address. Examples:

192.168.0.22 or 192.168.0.22/32 matches the IP Address 192.168.0.22.

192.168.0.0/24 matches all IP packets with source addresses from 192.168.0.1 to 192.168.0.254.

0.0.0.0/0 matches any IP packet.

Policy - Determines what to do with matching packets. They are accepted or dropped.

NOTE: The order of the rules is important. The rules are checked in ascending order until a rule matches. Rules below the matching one are ignored. The default policy applies if no match has been found.

Append a rule – To add a rule to the end of the rule list: Enter the IP/Mask and set the policy. Then press Append.

Insert a rule - To insert a rule according to the rule number: Enter the rule number, IP/Mask and set the policy. Then press Insert. All rules with higher numbers are shifted below.
Replace a rule - Enter the rule number, IP/Mask and set the policy. Then press Replace.

Delete a rule - Enter the rule number and press Delete.

Anti Brute Force Settings

Anti Brute Force Settings lets you block access to a specific user, for a fixed amount of time if a predefined number of unsuccessful login attempts by this user occurred.

Max. number of failed logins – insert a maximum number or leave it blank to disable Anti Brute Force.

Block time - Block time in minutes - insert a number or leave it blank.

To unblock blocked users. Connect to the DX User IP Serial 1 port using terminal software, and type **unblock**. A list of blocked users appears. Select the users to unblock.

37. SNMP Settings

The following information is available via SNMP:

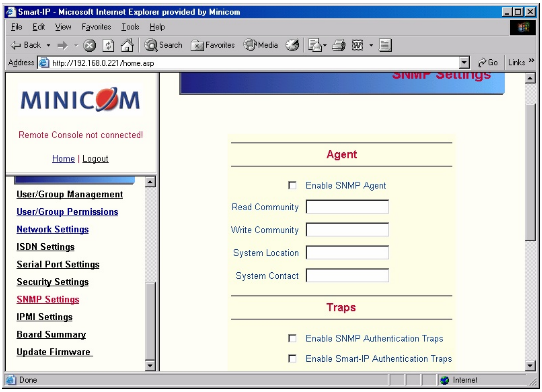
- Serial number
- Firmware version
- MAC address / IP address / Netmask / Gateway of LAN interface
- Configured users
- Currently active users with login time (login time is only valid if time is synchronized on DX User IP)

- Server's power state
- The following actions can be initiated via SNMP:
- Reset server
- Power on/off server
- Reset DX User IP

The following events are reported by DX User IP via SNMP:

- Login trial at DX User IP failed
- Login trial at DX User IP succeeded
- Denying access to a particular action.
- Server was reset.
- Server was powered on/off

From the DX User IP Menu choose SNMP settings. The SNMP Settings appear. See Figure 36.



Agent

☐ Enable SNMP Agent

Read Community

Write Community

System Location

System Contact

Traps

☐ Enable SNMP Authentication Traps

☐ Enable Smart-IP Authentication Traps

Figure 36 SNMP settings

You can change the following parameters:

Enable SNMP Agent - When checked, DX User IP will answer to SNMP requests. If a community is blank, you cannot perform the request. E.g. if you want to disable the possibility to reset DX User IP via SNMP, don't set a write community.

Read Community - This is the SNMP community, which allows you to retrieve information via SNMP.

Write Community - This community allows you to set options and reset DX User IP or the host via SNMP.

System Location - Type a description of the physical location of the host. This will be used in reply to the SNMP request "sysLocation.0".

System Contact - Type a contact person for the host. This will be used in reply to the SNMP request "sysContact.0".

Enable SNMP Authentication Traps -When checked, an SNMP trap will be sent in case somebody has tried to access DX User IP via SNMP using a wrong SNMP community.

Enable DX User IP Authentication Traps - When checked, an SNMP trap will be sent if somebody tries to login via the Web front-end. Both successful and failed logins trials will be indicated. Furthermore, there will be notification about other security violations like trying to perform an action via Web front-end for which a user has no permission.

Enable Host Traps -When checked, DX User IP will send SNMP traps whenever the host is reset, powered down or powered up.

Trap destinations Enter IP addresses, to which the traps will be sent. For every IP address, set an according community so that your management client can identify the SNMP traps.

After making the entries click Apply.

The DX User IP SNMP MIB

Click the link to access the DX User IP SNMP MIB file. With it, an SNMP client can communicate with DX User IP. Copy the MIB file and import it to the SNMP client software.

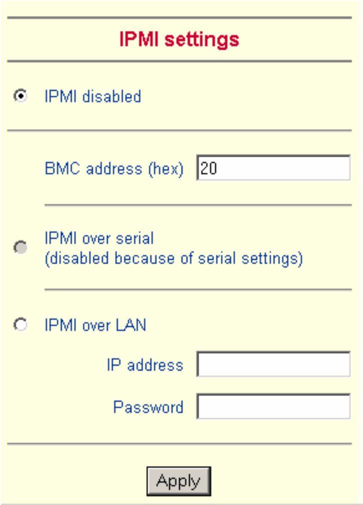
38. IPMI Settings

The DX User IP IPMI (Intelligent Platform Management Interface) is an additional way to power on or off the system or to perform a hard reset. You can also show an event log of the host system and the status of some system sensors (i.e. temperature). If your host system supports IPMI, you can access it in one of the following ways:

- IPMI over Serial
- IPMI over LAN

Both require IPMI V1.5.

From the DX User IP Menu choose IPMI Settings. The IPMI Settings appears. See Figure 37.



IPMI settings

● IPMI disabled

BMC address (hex) 20

○ IPMI over serial
(disabled because of serial settings)

○ IPMI over LAN

IP address

Password

Figure 37 IPMI Settings

IPMI disabled - Disables IPMI. Status via IPMI and Event Log via IPMI are not available and the power on/off and reset functions won't use IPMI.

BMC address - Hexadecimal Baseboard Management Controller address. Needed for all types of communication to the IPMI-interface. Usually you can find this address in the BIOS of the host system. The default and common value is 20.

IPMI over Serial - If your host system supports IPMI V1.5 and has an Intel EMP (Emergency Management Port, usually COM2) connector, you can connect IPMI through serial port 1 on DX User IP. Please note:

- Set the EMP port to Always enable and switch off the Restricted Mode.
- The BMC should accept a null username and a non-null password account as login.
- Passwords are 4 -16 characters long.
- Use a null modem cable for connection

IPMI over LAN - You can connect the IPMI over a LAN connection. You need a host system with IPMI V1.5 and a network adapter with a sideband connection to the BMC (mostly on board). In the IPMI Settings, enter the IP-address of this host system and the correct password for the LAN connection.

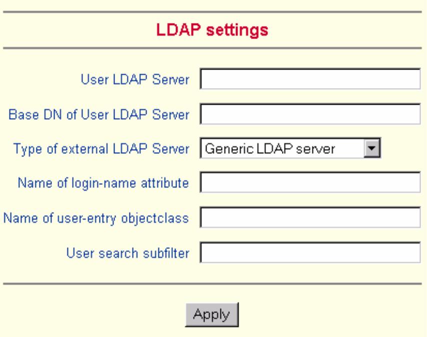
You can also access other IPMI systems when you enter their IP address.

39. LDAP Settings

You can keep authentication information in a central LDAP directory. The purpose of LDAP is simply to confirm the password during login with the LDAP server. The user must exist on both the LDAP and Smart IP 16 side.

On login Smart IP 16 internal user management checks the user. If the user is verified the password is then checked against the LDAP server. If the password is verified the user is logged in and the user rights are taken from Smart IP 16 local user management

From the DX User IP Menu choose LDAP Settings. The LDAP Settings appears. See Figure 38.



LDAP settings

User LDAP Server

Base DN of User LDAP Server

Type of external LDAP Server: Generic LDAP server

Name of login-name attribute

Name of user-entry objectclass

User search subfilter

Figure 38 LDAP Settings

User LDAP Server - Enter the name or IP address of the LDAP server containing all the user entries. If you use a name, configure a DNS server in the network settings.

Base DN of User LDAP Server - Specify the distinguished name (DN) where the directory tree starts in the user LDAP server.

Type of external LDAP Server - Set the type of the external LDAP server. This is necessary since some server types require special handling. Also the default values for the LDAP schema are set appropriately. Choose between Generic LDAP Server, Novell Directory Service and Microsoft Active Directory. If you don’t have Novell Directory Service or Microsoft Active Directory then choose Generic LDAP Server and edit the LDAP schema used (see below).

Name of login-name attribute - Name of the attribute containing the unique login name of a user. To use the default leave this field empty. The default depends on the selected LDAP server type.

Name of user-entry object class - The object class that identifies a user in the LDAP directory. To use the default leave this field empty. The default depends on the selected LDAP server type.

User search subfilter - Refine the search for users that should be known to the DX User IP.

40. Maintenance

From the DX User IP Menu choose Maintenance. The DX User IP Maintenance window appears.

Board Summary - This contains information about the DX User IP and its current firmware.

Updating firmware

You can receive firmware updates by email or download them from the Minicom Web site. Save the firmware file on the client computer.

To update the firmware:

1. Scroll down the Maintenance window. Under Maintenance features click Update Firmware. The Update Firmware window appears. See Figure 39.

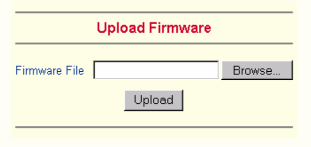


Figure 39 Update Firmware window

2. Locate and upload the firmware file from your client system. In case of any errors the upload will be aborted.

   After a smooth upload the Update Firmware panel appears showing the current firmware version number and the uploaded firmware version number.

3. Press the Update button. The firmware updates. Warning! This process is irreversible; ensure the DX User IP's power supply won't be interrupted during the update process, as this may cause damage.

4. When prompted reset DX User IP manually by pressing the Reset Smart-IP button. When pressed all connections to the administration or Remote console close. 30 seconds later, DX User IP runs with the new firmware. You must login again.

Attention: Only experienced staff members or administrators should perform a firmware update.

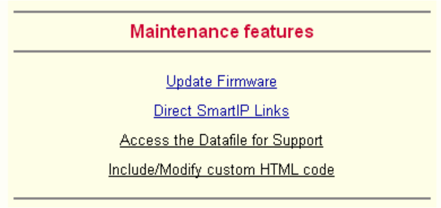
Direct SmartIP Links

You can set up direct links to any Minicom IP hardware over a LAN or WAN. Use the links to directly connect to these IP units without having to remember their IP addresses. You can also see the status of the remote IP units as explained below.

All the IP units must have firmware that supports direct connection functionality. Ensure that firmware of all units is updated to the latest version. See the User Guide of each IP unit to update the firmware.

To set up the direct connections:

1. Scroll down the Maintenance window to Maintenance Features. See Figure 40.



Maintenance features

Update Firmware

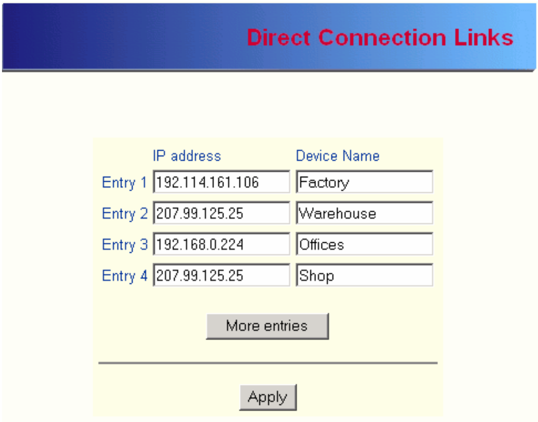
Direct SmartIP Links

Access the Datafile for Support

Include/Modify custom HTML code

Figure 40 The Maintenance Features

2. Click Direct SmartIP Links. The Direct Connection Links page opens. See Figure 41.



Direct Connection Links

	IP address	Device Name
Entry 1	192.114.161.106	Factory
Entry 2	207.99.125.25	Warehouse
Entry 3	192.168.0.224	Offices
Entry 4	207.99.125.25	Shop

Figure 41 The Direct Connections Links page

3. In the IP address column, type IP addresses of the other Minicom IP units. For up to 16 entries press More entries.

4. In the Device Name column type a description.
5. Click Apply. On the Home page Monitor icons representing the direct connection IP units appear. See Figure 42.

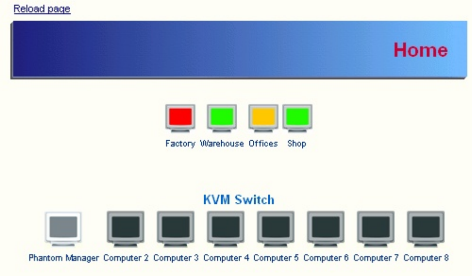


Figure 42 The Monitor icons

The icons are color coded as follows:

Icon	Meaning
▨ Gray	Powered off or disconnected from the network
🟩 Green	Powered on but no user is logged in
🟧 Orange	A user is logged in
🟥 Red	User is working with the remote console

Note! If the state of one device changes, there may be a delay of some seconds until icon colors reflect the true situation especially where the network link of this device is going down.

To connect to an IP unit:

Click the desired icon on the Home page. The Login page of that IP unit appears.

Figure 43 below illustrates a direct connections link scenario.

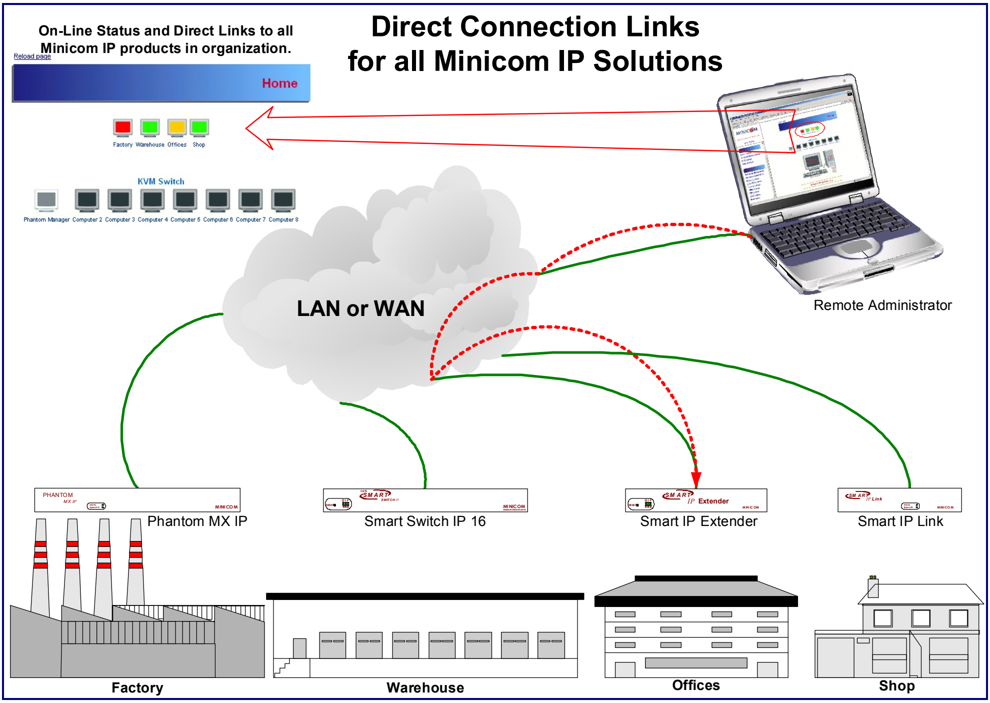

On-Line Status and Direct Links to all Minicom IP products in organization.
Reload page
Home
Factory Warehouse Offices Shop
KVM Switch
Phantom Manager Computer 2 Computer 3 Computer 4 Computer 5 Computer 6 Computer 7 Computer 8
Direct Connection Links for all Minicom IP Solutions
LAN or WAN
Remote Administrator
Phantom MX IP
Smart Switch IP 16
Smart IP Extender
Smart IP Link
Factory
Warehouse
Offices
Shop

Figure 43 Direct connections link scenario

Access the Datafile for support

Click the link to access the DX User IP data file. The file contains support information, which will help us to troubleshoot your problem.

Include/modify custom HTML code

You can modify the HTML code of the Home page to include customized graphics and text. You can't save graphics on the DX User IP therefore the graphics should be accessible on the Network. Define Primary and secondary DNS in the Network settings if needed.

The system is now fully configured, you can now access the remote console.

41. Accessing the remote console

From the menu click **Show Remote Console**. The DX Login screen appears inside the remote console. See Figure 44.

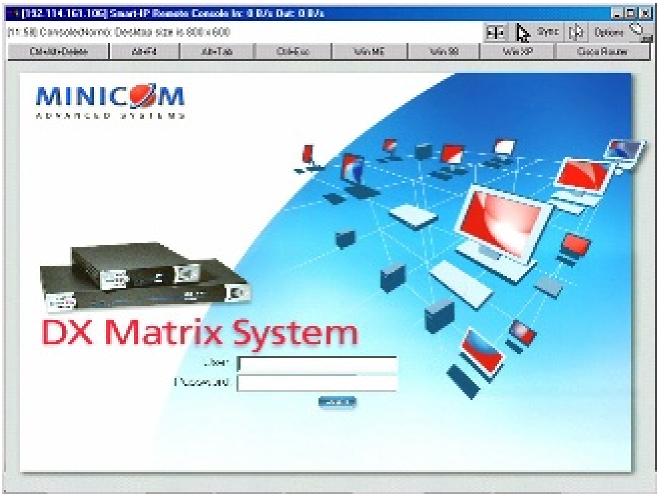


Figure 44 The DX Login screen inside the remote console

Go to the DX Operating Guide

Type the default username ‘**admin**’ and password ‘**admin’**.

To configure/manage the devices connected to the DX system see the DX Operating Guide.

You can work on the remote console with the keyboard and mouse. The delay with keyboard and mouse reactions - if any - depends on the line connection bandwidth.

42. Keyboard layout

Your host keyboard changes its layout to match the remote host system. So for example if the host system uses a US English keyboard layout, special keys on a German keyboard won't work but will function as US English keys.

To solve this problem, adjust the remote system keyboard to the same mapping as your host one. Alternatively, use the Soft-Keyboard that is part of the Remote Console applet.

The Remote Console window is a Java Applet that tries to establish its own TCP connection to DX User IP. The protocol that is run over this connection is not HTTP or HTTPS but a protocol called RFB (Remote Frame Buffer Protocol). Currently RFB tries to establish a connection to port number 443. Your local network environment must allow this connection to be made, i.e. your firewall and, in case you have a private internal network, your NAT (Network Address Translation) settings must be configured accordingly.

In case DX User IP is connected to your local network environment and your connection to the Internet is available using a proxy server only without NAT being configured, the Remote Console is very unlikely to be able to establish the according connection. This is because today's Web proxies are not capable of relaying the RFB protocol. In case of problems, please consult your network administrator in order to provide an appropriate network environment.

The Remote Console window shows the remote screen at its optimal size. However, you can always resize the Remote Console window in your host window system.

Hint: The Remote Console window on your local window system is just one window among others. To make the keyboard and mouse work, your Remote Console window must have the local input focus.

43. The Control buttons /toolbar icons

The control buttons/toolbar icons have the following functions:

Ctrl+Alt+Delete - Sends the `Control Alt Delete' key combination to the remote system.

Auto adjust - Adjusts the screen to the best visual quality

Sync **Sync mouse** - Synchronizes the host and remote mice. Necessary when using accelerated mouse settings on the host system. There is generally no need to change mouse settings on the host.

- Discussed on page 59.

Click the Options button to get the following options:

Monitor Only - When turned on, the Remote Console does not accept keyboard / mouse input. The top right hand icon appears like this .

Exclusive access - If a user has the appropriate permission, he can force the Remote Consoles of all other users to close. No one can open the Remote Console until this user disables the Exclusive access or logs off.

Readability Filter - Turn the filter on in scaling mode to preserve most of the screen details. Only available with a Java Virtual Machine version number of 1.3 or higher.

Scaling - Scale down the Remote Console. Not all display details will be preserved.

Mouse handling - The submenu for mouse handling offers two options for synchronizing the host and the client mouse pointer - explained on page 58. The option for 'Fast Sync' shows the hotkey if you defined one using the Remote Console Settings.

Local cursor - Choose a cursor shape for the host mouse. The number of available shapes depends on the Java Virtual Machine, only version 1.2 or higher offers the full list.

Chat Window - Opens the Chat window

Video Settings – To adjust the video settings.

Refresh video - Refreshes the video

Soft Keyboard - Opens the soft-keyboard menu:

- Click Show. The soft-keyboard appears.
- Click Layout. Choose layout
- Click Mapping. Choose the desired language and country

Local Keyboard - Used to change the language mapping of your browser machine running the Remote Console Applet. Normally the Applet determines the correct value automatically. However, depending on your particular JVM and your browser machine settings this is not always possible. A typical example is a German localized system that uses a US-English keyboard mapping. In this case you have to change the Local Keyboard setting manually to the right language.

KVM keys – Each key represents a port. See page 26 to define hotkeys to switch to each port. The keys also appear in the toolbar.

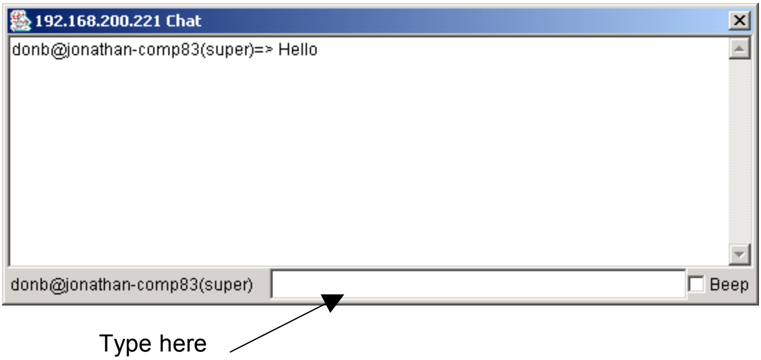
Hotkeys - Button Keys simulate keystrokes on the remote system that cannot be generated locally. To define hotkeys see page 18.

Encoding – Choose the desired options from the Compression and Color Depth drop down menus.

Information bar - Shows the console and connection state and remote screen size. The value in round brackets describes the connection to the remote system: Norm stands for a standard connection without encryption; SSL stands for a secured connection. Double click the bar to see a history of all the status information.

44. The Chat window

Use the Chat window to chat with others logged into the system. Figure 45 illustrates the Chat window.



192.168.200.221 Chat

donb@jonathan-comp83(super)=> Hello

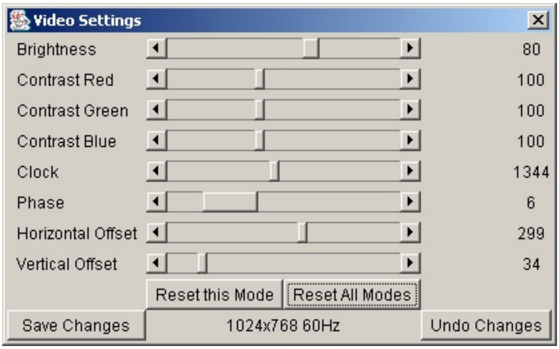
Type here

Figure 45 Chat window

All messages are broadcast to ALL connected users. There is no option to direct a message to a particular user only. There is no message history, so messages can only be received after opening the Remote Console. Type your message and press Enter. To end the Chat, close the Chat window.

45. The Video settings

From the Options menu choose Video Settings. The Video Settings box appears. See Figure 46.



Video Settings

Brightness	80
Contrast Red	100
Contrast Green	100
Contrast Blue	100
Clock	1344
Phase	6
Horizontal Offset	299
Vertical Offset	34

1024x768 60Hz

Figure 46 The Video settings

The parameters have the following functions:

Brightness - Brightness control.

Contrast Red/Green/Blue- RGB contrast control.

Clock - Sets the horizontal frequency for a video line, this depends on the video mode. Different video cards may require different values. The default settings and auto adjustment procedure should be adequate for all common configurations. If not change this setting together with the sampling phase.

Phase - Sets **t**he phase for video sampling.

Horizontal Offset - Moves the picture in a horizontal direction.

Vertical Offset - Moves the picture in a vertical direction.

Brightness and contrast affect all modes and KVM ports globally; the other settings are changed specifically for each mode on each KVM port.

Reset this Mode - Resets mode to factory defaults.

Reset All Modes - Resets all modes to factory defaults.

Save Changes - Saves changes.

Undo Changes - Undoes changes that have not yet been saved.

46. Video Settings access

In the User/Group Permissions section on page 33, it explained how to set access levels for all parameters including Video Settings access. A Remote Console user can always change Brightness, Contrast and picture positions, whatever his Video Settings access rights. A user who has permission to change the Video Settings can also change the Clock and Phase parameters and use the reset buttons.

Hint. Always press the Auto Adjust video button before operating the computer. The screen should be inside the borders of Remote Control window. If the video doesn’t synchronize properly or there is a lot of incoming traffic, reset all modes and synchronize video again to improve video transfer.

47. Mouse synchronization

There are two ways to synchronize the host and remote mice:

Fast Sync - Choose **Options** / **Mouse Handling** / **Fast Sync**. This corrects a temporary, but fixed skew.

Intelligent Sync - If fast sync doesn't work or the mouse settings have been changed on the host system use the Intelligent Sync option.

To do so:

1. Ensure the picture is correctly adjusted, Click Auto Adjust or manually correct the picture using the Video Settings.
2. Choose **Options** / **Mouse Handling** / **Intelligent Sync**.

Pressing the ↖ Sync button leads to a fast sync, except when the video mode recently changed.

Note! For the intelligent sync to work, the picture MUST be correctly adjusted. Use the auto adjustment function or the manual correction in the Video Settings panel to adjust the picture. The video must also be of sufficiently good quality.

Single mouse mode

The information above applies to the Double Mouse Mode, where remote and host mouse pointers are visible and need to be synchronized. There is also the Single Mouse mode. In this mode only the client mouse pointer is visible.

Single Mouse mode needs a Sun Java Virtual Machine 1.3 or later.

Select the mode in the Remote console – see Figure 44.

From the Options menu choose Mouse Handling/Mouse Mode/ Single Mouse Mode.

Or press ↖ from the Control Buttons toolbar. The client mouse pointer can be controlled directly.

To leave this mode, you must define a mouse hotkey in the Remote Console Settings Panel – see page 18. Press this key to free the captured host mouse pointer.

Frequently Asked Questions

Q 1: The client mouse doesn't work or is not synchronized.

A: Ensure the DX User IP mouse settings match the mouse model. Also see page 58

Q 2: Bad video quality or grainy picture

A: Use the brightness and contrast settings - see page 57. Use the auto adjustment feature to correct a flickering video.

Q 3: Login fails.

A: Was the correct user and password given? On delivery, the user "super" has the password "smart". Configure your browser to accept cookies.

Q 4: I use the Mozilla Browser 0.9.x., Netscape 6.x and https (secure http). When I try to open the Remote Console applet loading fails with Bad Magic Number Exception.

A: This is a bug in some older versions of Mozilla. Don't use https, or upgrade your Browser.

Q 5: The Remote Console window can't connect to DX User IP.

A: Maybe a firewall prevents access to the Remote Console. Ensure the TCP port numbers 443 or 80 are open for incoming TCP connections.

Q 6: Cannot connect to DX User IP.

A: Check if the network connection is working (ping the IP address of DX User IP). If not, check network hardware. Is DX User IP powered on? Check if the IP address of DX User IP and all other IP related settings are correct. Also verify that all the IP infrastructure of your LAN, like routers are correctly configured. Without a ping functioning, DX User IP can't work.

Q 7: Special key combinations, e.g. ALT+F2, ALT+F3 are intercepted by the console system and not transmitted to the host.

A: Define a so-called 'Button Key'. This can be done in the Remote Console settings.

Q 8: In the browser the DX User IP pages are inconsistent or chaotic.

A: Ensure your browser cache settings are feasible, and are not set to something like "never check for newer pages". Otherwise DX User IP pages may be loaded from your browser cache and not from the card.

Q 9: Windows XP doesn't awake from standby mode

A: This is possibly a Windows XP problem. Try not to move the mouse while XP goes into standby mode.

Glossary of terms

ACPI - A specification that enables the operating system to implement power management and system configuration.

ATX - Advanced Technology Extended: A particular specification of a motherboard introduced by Intel in 1995.

BMC - Board Management Controller: implements the IPMI based main board management functions.

DHCP - Dynamic Host Configuration Protocol: protocol for dynamically assigning IP configurations in local networks.

DNS - Domain Name System: protocol used to locate computers on the Internet by their name.

EMP - Emergency Management Port: provides remote emergency access and control of server resources. EMP offers operating system independent, fundamental remote management access regardless of the server's current state or network availability.

HTTP - Hypertext Transfer Protocol: the protocol used between web browsers and servers.

HTTPS - Hyper Text Transfer Protocol Secure: secure version of HTTP.

IPMI - Intelligent Platform Management Interface

MIB - Management Information Base: describes the structure of the management information that can be accessed via SNMP.

SNMP - Simple Network Management Protocol: a widely used network monitoring and control protocol.

SSL - Secure Socket Layer: encryption technology for the Internet used to provide secured data transmissions.

SVGA - Super VGA: A refinement of Video Graphics Array (VGA) that provides increased pitch and resolution performance.

Appendix A: DX User IP Video modes

The DX User IP supports the following video modes. Do not use other custom video settings.

Resolution	Refresh rates (Hz)
640x350	70, 85
640x400	56, 70, 85
640x480	60, 67, 72, 75, 85, 90, 100, 120
720x400	70, 85
800x600	56, 60, 70, 72, 75, 85, 90, 100
832x624	75
1024x768	60, 70, 72, 75, 85, 90, 100
1152x864	75
1152x870	75
1152x900	66, 76
1280x960	60
1280x1024	60
1280x1024	75
1600x1200	60

Appendix B: Key codes

Figure 47 illustrates the keys on a standard 104 key PC keyboard with a US English language mapping. These keys are used to define keystrokes or hotkeys for several DX User IP functions. The keys may not represent keys used on international keyboards. Most modifier keys and other alphanumeric keys are in identical positions, whichever language mapping you are using.

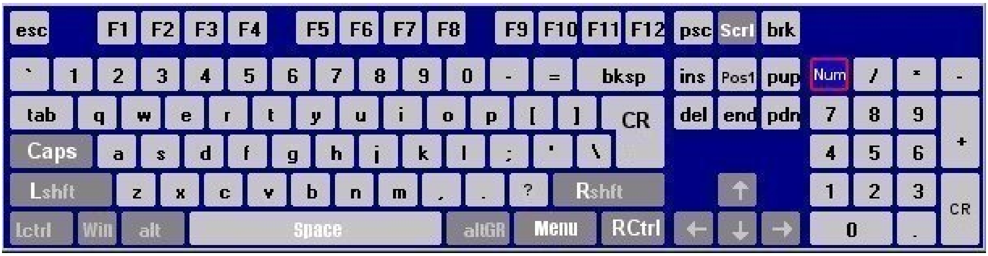

esc F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12 psc Scrl brk
` 1 2 3 4 5 6 7 8 9 0 - = bksp ins Pos1 pup Num / * -
tab q w e r t y u i o p [ ] CR del end pdn 7 8 9 +
Caps a s d f g h j k l ; ' \ 4 5 6
Lshft z x c v b n m , . ? Rshft ↑ 1 2 3 CR
lctrl Win alt Space altGR Menu RCtrl ← ↓ → 0 .

Figure 47 US English keyboard layout

The table below lists keys that that have 2 ways of being written (Alternative) and also keys that are written in a different way to that which appears on the actual keyboard key (Key code).

Key	Key code	Alternative
~	~	TILDE
-	-	MINUS
=	=	EQUALS
<	<	LESS
/	/	SLASH
Bksp	BACK_SPACE	
Tab	TAB	
CR	ENTER	
Caps	CAPS_LOCK	
\	\	BACK_SLASH
Lshft	LSHIFT	SHIFT
Lctrl	LCTRL	CTRL
Win	WINDOWS	
Alt	LALT	ALT
AltGR	ATGR	
Esc	ESCAPE	ESC

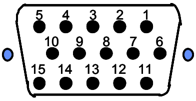
Key	Key code	Alternative
Psc	PRINTSCREEN	
Scrl	SCROLL_LOCK	
Brk	BREAK	
Ins	INSERT	
Pos1	HOME	
Pup	PAGE_UP	
Del	DELETE	
Pdn	PAGE_DOWN	
↑	UP	
←	LEFT	
↓	DOWN	
→	RIGHT	

The numerical keypad codes

Key	Key code	Alternative
num	NUM_LOCK	
0	NUMPAD0	
1	NUMPAD1	
2	NUMPAD2	
3	NUMPAD3	
4	NUMPAD4	
5	NUMPAD5	
6	NUMPAD6	
7	NUMPAD7	
8	NUMPAD8	
9	NUMPAD9	
+	NUMPADPLUS	NUMPAD_PLUS
/	NUMPAD/	
*	NUMPADMUL	NUMPAD_MUL
-	NUMPADMINUS	NUMPAD_MINUS
CR	NUMPADENTER	

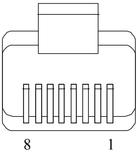
Appendix C: Pin assignments

VGA HD-15



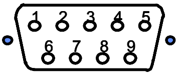
Pin	Assignment	Pin	Assignment
1	Red	9	5 V
2	Green	10	GND sync
3	Blue	11	Not connected
4	Not connected	12	SDA, DCC, ...
5	GND	13	HSYNC
6	GND red	14	VSYNC
7	GND green	15	DATA CLOCK
8	GND blue		

RJ 45 Connector Ethernet



Pin	Assignment	Pin	Assignment
1	TX +	5	Not connected
2	TX -	6	RX -
3	RX +	7	Not connected
4	Not connected	8	Not connected

Serial SUB-D 9 Connector



Pin	Assignment	Pin	Assignment
1	DCD	6	DSR
2	RX	7	RTS
3	TX	8	CTS
4	DTR	9	RI
5	GND		

Appendix D: Disabling mouse acceleration

The following steps describe how to disable mouse acceleration in a number of different Operating Systems.

Windows 98 and Windows ME

1. From the Control Panel, click the Mouse icon.
2. From the Mouse Properties dialog box, click the Pointer Options tab.
3. Center the Pointer Speed slider bar
4. Click the Accelerate… button.
5. Deselect Pointer acceleration option.

Windows 98 SE and Windows NT4

1. From the Control Panel, click the Mouse icon.
2. From the Mouse Properties dialog box, click the Motion tab.
3. Set the Pointer speed slider bar completely to the left.

When a Microsoft Intellimouse driver is installed on Windows 98, Windows ME or Windows NT4

1. From the Control Panel, click the Mouse icon
2. From the Mouse Properties dialog box, click the Pointer Option tab
3. Center the Pointer Speed slider bar.
4. Click Advanced… button.
5. Deselect Enable pointer acceleration option

NetWare 6 servers running Java 1.4.1:

1. From the NetWare 6 Graphical User Interface (GUI) Environment tool Input tab, select Turn off mouse acceleration.
2. Click Apply and restart the GUI.

NetWare 6 servers running Java 1.3.1 CSP8 or CSP9:

1. Add the following command to the NetWare 6 sys:/java/nwgfx/xinitrc file:

```
xset m 1
```

2. Save the file and restart the GUI.

Linux

1. Execute the following command line parameter:

```
xset 0 255
```

2. Or-

   ```
   xset m 0
   ```

Appendix E: Technical specifications

Host computer - Operating systems	Novel, Linux, Windows 98, 2000, XP and later
Client computer - Operating systems	Windows 98, ME, 2000, XP and later, Linux. Internet browser with full Java support. RS232 terminal: For external RS232 control
Host computer - resolution	Up to 1600x1200 @60Hz
Client computer - resolution	Recommended resolution should be higher than host computer resolution
Host mouse driver	Microsoft Driver or Operating System default mouse driver.
DX User IP to local KVM connection	Screen – HDD15; Keyboard/Mouse – MiniDIN6
Line connection	RJ45 – LAN, Autosensing 10/100 Mbit/s
Serial connection	DB9: COM for initial configuration and external modem,
Dimensions	43.2x27x4cm / 17X11X1.6"
Power supply	100 – 240 VAC 50 / 60 Hz
Operating temperature	0°C to 40°C / 32° to 104°F
Storage temperature	-40°C to 70°C / -40° to 158°F
Operating humidity	10% to 90% (non-condensing)
Storage humidity	5% to 95% (non-condensing)
Warranty	3 years

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Please include the following information: Guide name, part number and version number (as appears on the front cover).

E.g. Remote Power Switch Operating Guide, 5UM20161, V1

Regional Offices

Germany

Kiel
Tel: + 49 431 668 7933
info.germany@minicom.com

France

Vincennes
Tel: + 33 1 49 57 00 00
info.france@minicom.com

Italy

Rome
Tel: + 39 06 8209 7902
info.italy@minicom.com

www.minicom.com

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